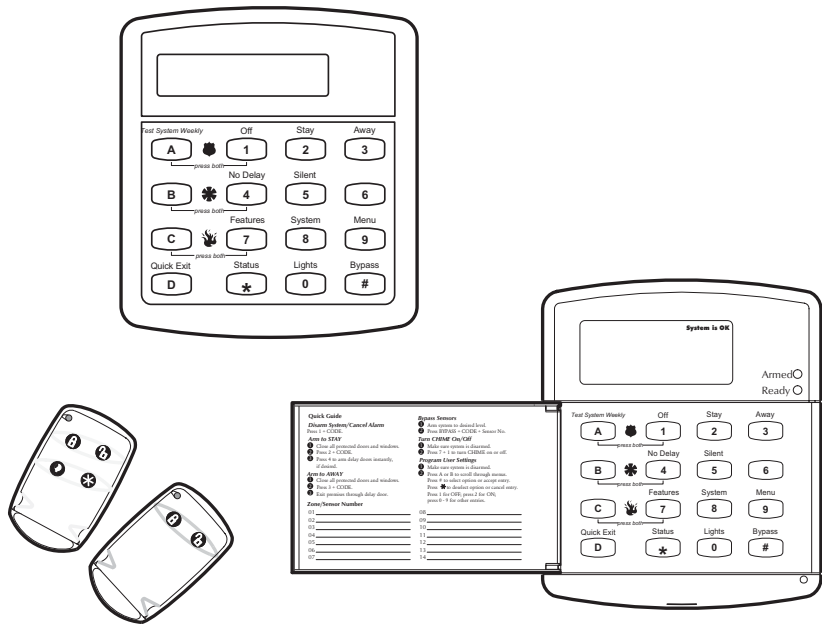




466-1665 Rev F
May 2003

GE Interlogix

**Part No:
60-806
60-806-95R**



Concord Express

Installation Instructions

FCC Notices

FCC Part 15 Information to the User

Changes or modifications not expressly approved by GE Interlogix can void the user's authority to operate the equipment.

FCC Part 15 Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the affected equipment and the panel receiver to separate outlets, on different branch circuits.
- Consult the dealer or an experienced radio/TV technician for help.

ACTA Part 68

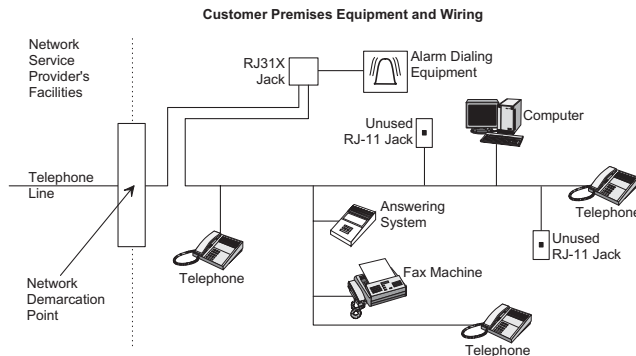
This equipment complies with Part 68 of the FCC Rules. Located on this equipment is a label that contains, among other information, the FCC registration number and the ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

FCC Part 68 Registration No. B4ZUSA-27621-AL-E REN: 0.2B

The REN is used to determine the maximum number of devices that may be connected to your telephone line. Excessive RENs on a telephone line may result in devices not ringing in response to an incoming call. In most areas, the sum of all device RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements as adopted by ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compliant modular jack that is also compliant. See the Installation Instructions for details.

Alarm dialing equipment must be able to seize the telephone line and place a call in an emergency situation. It must be able to do this even if other equipment (telephone, answering system, computer modem, etc.) already has the telephone line in use. To do so, alarm dialing equipment must be connected to a properly installed RJ31X jack that is electrically in series and ahead of all other equipment attached to the same telephone line. Proper installation is depicted in the following diagram. If you have any questions concerning these instructions, consult your local telephone company or a qualified installer about installing an RJ31X jack and alarm dialing equipment for you.



If this equipment causes harm to the telephone network, the telephone company may temporarily disconnect your service. If possible, you will be notified in advance. When advance notice is not practical, you will be notified as soon as possible. You will also be advised of your right to file a complaint with the FCC.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. You will be given advance notice in order to maintain uninterrupted service.

If you experience trouble with this equipment, please contact the company that installed the equipment for service and/or repair information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Patent Information

This product and the use of this product may be covered by one or more of the following patents: 5,805,063, 5,872,512, 5,942,981, 4,855,713. Except expressly provided herein, the purchase of this product shall not constitute a license or otherwise provide a right to practice a method covered by any of the identified patents. GE Interlogix hereby grants the purchaser of this product a limited, non-exclusive license to practice the methods patented in the identified patents solely with products manufactured, sold or licensed by GE Interlogix. This license grant does not extend to the use of unlicensed, third party products with this product.

Canada Notice

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

For your protection, make sure that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together



Do not attempt to make connections yourself. Contact the appropriate electrician or electric inspections authority.

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the LNs of all the devices does not exceed 100. Load Number: .1 The term "IC:" before the certification/registration number only signifies that the Industry Canada technical specifications were met. IC: 867A 787SIMON

"AVIS: - L'étiquette du ministère des Communications du Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme à certaines normes de protection, d'exploitation et de sécurité des réseaux de télécommunications. Le ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. Dans certains cas, les fils intérieurs de l'entreprise utilisés pour un service individuel à ligne unique peuvent être prolongés au moyen d'un dispositif homologué de raccordement (cordon prolongateur téléphonique interne). L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêchent pas la dégradation du service dans certaines situations. Actuellement, les entreprises de télécommunication ne permettent pas que l'on raccorde leur matériel à des jacks d'abonné, sauf dans les cas précis prévus par les tarifs particuliers de ces entreprises.

Les réparations de matériel homologué doivent être effectuées par un centre d'entretien canadien autorisé désigné par le fournisseur. La compagnie de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement. - L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas".

Une note explicative sur les indices de charge (voir 1.6) et leur emploi, à l'intention des utilisateurs du matériel terminal, doit être incluse dans l'information qui accompagne le matériel homologué. La note pourrait être rédigée selon le modèle suivant:

"L'indice de charge (IC) assigné à chaque dispositif terminal indique, pour éviter toute surcharge, le pourcentage de la charge totale qui peut être raccordée à un circuit téléphonique bouclé utilisé par ce dispositif. La terminaison du circuit bouclé peut être constituée de n'importe quelle somme des indices de charge de l'ensemble des dispositifs ne dépasse pas 100."

L'indice de charge de cet produit est _____.



GE Interlogix

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2266 Second Street North
North Saint Paul, MN 55109
Technical Support: 800-777-2624

Contents

<i>About This Manual</i>	<i>1</i>
<i>Special Installation Requirements</i>	<i>1</i>
UL Listed Systems	1
UL-Canada Listed Systems	3
<i>Planning the Installation</i>	<i>3</i>
Standard Panel	3
Touchpads	3
SnapCard	3
<i>Installing the System</i>	<i>4</i>
Determine the Panel Location	4
Total System Power and Wire Length Guidelines	5
Mounting the Panel	6
Identify Panel Components	7
Connecting the Panel to Earth Ground	7
Installing Optional SnapCards	8
Installing Optional Hardwire Input Modules (HIMs)	8
Connecting Detection Devices to Panel Zone Inputs	9
Connecting Sirens	12
Connecting Siren Drivers, Self-Contained Sirens, and Bells	13
Connecting Touchpads	14
Installing an RJ-31X Phone Jack (13-081)	14
Connecting the Phone Line to the Panel with a DB-8 Cord	15
Connecting the AC Power Transformer	16
Powering Up the Panel	16
<i>Programming the Panel</i>	<i>17</i>
Entering Programming Mode	17
Touchpad Button Programming Functions	18
Moving Through Program Mode Tiers and Menus	18
Programming Tier 1 Menu Items	19
Programming Tier 2 Menu Items	19
Exiting Programming Mode	42
Entering User Programming Mode	43
Downloader Programming	46
<i>Testing the System</i>	<i>46</i>
Basic System Commands	47
Testing Zones/Sensors	47
Testing Phone Communication	48
Testing Central Station/Pager Communication	48
Testing Outputs/Sirens	48

Changing Fixed Display LCD Touchpad Chime and Trouble Beep Tones	49
<i>Troubleshooting</i>	50
<i>Appendix A: System Configuration Worksheets</i>	54
Cross-Zoning	57
<i>Appendix B: Programming Mode Menus and Settings</i>	66
<i>Specifications</i>	68
<i>Wiring Diagram</i>	<i>Back Page</i>

About This Manual

This manual provides information for planning, installing, programming, and testing this security system. When necessary, this manual refers you to other documentation included with compatible devices.

Planning sheets are included for you to record hardware layout and software programming settings.

Special Installation Requirements

This security system can be used as a wire warning system, an intrusion alarm system, an emergency notification system, or any combination of the three.

Some installations may require configurations dictated by city or state codes, insurance, or Underwriter's Laboratories (UL). This section describes the various component and configuration listings.

UL Listed Systems

This section describes the requirements for UL Listed systems.

Basic System

- Control Panel (60-806, 60-806-95R)
- Backup Battery, 12 VDC, 4 AH (60-681)
- SuperBus 2000 2x16 LCD Touchpad (60-746-01), SuperBus 2000 Fixed Display Touchpad (60-820), SuperBus 2000 2x20 LCD Touchpad (60-803), or SuperBus 2000 2x20 VFD Touchpad (60-804)
- Standard Class II 16.5 VAC, 25 VA Power Transformer; manufacturer—Tech Electro Ind, Inc. Part No. 48A0164 (60-822)
- 15-Watt, Dual Tone Siren (13-469) or Hardwire Siren (13-046)

Household Burglary Alarm System Unit (UL 1023)

Basic system, plus:

- Hardwire Magnetic Contact (Sentrol part # 1075-N or 1038T-N) or Wireless Learn Mode Door/Window Sensor (60-362), Wireless Learn Mode PIR Motion Sensor (60-703-95, 60-511, or 60-639)
- IMMEDIATE TROUBLE BEEPS set to on
- UL 98 OPTIONS set to on
- RECEIVER FAILURE set to on
- EXIT DELAY set to 60 seconds or less
- QUICK EXIT set to off
- SIREN TIMEOUT set to 4 minutes or more
- SIREN VERIFY set to on
- ENTRY DELAY set to 45 seconds or less
- RF TX TIMEOUT set to 24 hours
- EXTENDED DELAY set to off
- TWO TRIP ERROR set to off
- ALARM VERIFY set to off
- DISABLE TROUBLE BEEPS set to off
- SYSTEM TAMPER set to on

Household Fire Warning System (UL 985)

Basic system plus:

- Hardwire Smoke Detector:
System Sensor models 2100D, 2100TD, 2100S, 2100TS, 2400, or 2400TH learned into Sensor Group 26 Sentrol (ESL) models 429AT, 521B, or 521BXT learned into sensor group 26
- Wireless Smoke Sensor 60-506-319.5 or 60-645-95 learned into sensor group 26
- IMMEDIATE TROUBLE BEEPS set to on
- UL 98 OPTIONS set to on
- RECEIVER FAILURE set to on
- SIREN VERIFY set to on
- RF TX TIMEOUT set to 4 hours
- ALARM VERIFY set to off
- DISABLE TROUBLE BEEPS set to off

UL 1023 & 985 24-Hour Backup

- For 24-hour backup, the total current draw for all connected devices is limited to 90 mA continuous using a 4.0 AH battery.

SIA System Requirements

Note
UL requirements take priority over SIA requirements.

SIA system requirements are the same as those described for a UL Listed Basic System on page 1, plus:

- If multiple annunciation is required, use Hardwire Siren part no.13-046.

SIA Setting Requirements

The following table describes programming requirements to meet ANSI-SIA CP-01.

Shortcut #	Function	Programming Page Reference	Testing Page Reference	Default Setting	Required Setting
0003	SIA False Alarm Reduction	21	46	On	On
0013	Exit Extension	22	46	On	On
0014	Auto Stay Arming	22	46	On	On
0016	Duress Code	23	46	Disabled	Disabled
02005	Dialer Abort	28	46	On	On
02006	Dialer Abort Delay	28	46	30 Sec.	15-45 sec.
02007	Cancel Message	28	46	On	On
02009	Call Wait Cancel	28	46	Disabled	On if reporting to central station and customer has call waiting service
0310	Entry Delay	31	46	30 sec.	30-240 sec.
0311	Exit Delay	31	46	60 sec.	45-184 sec.
05014	Swinger Limit	35	46	1	1
0900	Smoke Verify	42	46	Off	On if smoke alarms are programmed into system
N/A	Cross Zoning	57	46	Disabled	Enabled for zones with a high probability of false alarms

The following table describes non-programmable (hard coded) system operation as required to meet ANSI-SIA CP-01 and is provided only for your reference.

Function	Operation
Disarm During Entry Delay	Enter Code Only (or 1 + CODE)
Cancel Alarm	Enter Code Only (or 1 + CODE)
Abort Annunciation	Enabled

Function	Operation
Cancel Report Annunciation	Enabled

UL 1635 Digital Alarm Communicator System

Same as UL 1023 & 985 plus:

- AC FAILURE set to on
- PHONE NUMBER must be programmed
- HIGH LEVEL REPORTS set to on.
- LOW LEVEL REPORTS set to on
- PHONE TEST set to on
- AUTO PHONE TEST set to on
- PHONE TEST FREQ. set to 1
- NEXT PHONE TEST set to 1
- LOW CPU BATTERY set to on
- COMM FAILURE set to on
- RF TX TIMEOUT set to 4 hours

Central Station Reporting

The panel has been tested with the following central station receivers using SIA and Contact ID reporting formats:

- ITI CS-5000 Central Station Receiver
- Sur-Gard Central Station Receiver with models SG-DRL2A and SG-CPM2

UL-Canada Listed Systems

This section describes the requirements for ULC (UL Canada) Listed systems.

- CSA Certified Accessories
The UL-Canada Basic System is nearly the same as the “UL Basic System” described previously, the only difference being that you must use the ITI 60-679-CN Class II transformer (Basler part number BE 116250-AAA) to power the panel.
- Residential Burglary Alarm System Unit (CAN/ULC-S309)
Same as “UL Basic System and Household Burglary Alarm System Unit (UL 1023)” described previously and siren timeout must be set to 5 minutes or more.

Residential Fire Warning System Control Unit (CAN/ULC-S545-M89)

Same as “UL Basic System and Household Fire Warning System (UL 985)” described previously.

California State Fire Marshall Listed Systems

Same as **Household Fire Warning System (UL 985)**, plus:

- SMOKE VERIFY must be set to off

Note

For UL 1635 installations, Entry Delay plus Dialer Abort Delay must not exceed 60 seconds.

Note

For 24-hour backup, external power drain is limited to 90 mA continuous using a 4.0AH battery.

Planning the Installation

This section describes the system capabilities to help you get familiar with the system. To help you prepare for system installation, Appendix A provides planning sheets with tables that let you record the hardware and programming configuration of the system.

Standard Panel

The following describes the basic panel (out-of-box) hardware capabilities.

- **Power:** Input for an AC step-down, plug-in style transformer.
- **Auxiliary Power Output:** Output that supplies up to 750 mA (90 mA for UL Listed systems) at 12 VDC for bus devices and hardwired detectors, such as touchpads and motion detectors.

- **Bus A and B:** Input and output that provide communication between bus devices and the panel.
- **2 Onboard Outputs:** One 12-volt and one open-collector output that can be set up to activate other signalling devices, based on system events.
- **6 Supervised Hardwire Zones:** Factory programmed inputs for various hardwired detectors (see “Accessory Modules Menu” on page 40 for a list of factory programmed settings). Zone 6 can be set up in programming to accept 2-wire smoke detectors.
- **Built-In Radio Receiver:** Allows use of GE Interlogix 319.5 MHz. crystal and/or SAW Learn Mode wireless sensors and touchpads.
- **Phone Line Connection:** Allows the panel to communicate with central monitoring stations and pagers.

Touchpads

The following describes the different touchpads that can be used for system programming and operation.

- **SuperBus 2000 2x16 LCD Alphanumeric Touchpad:** Provides complete system programming and operation control. Displays system messages, and indicates system status.
- **SuperBus 2000 2x20 LCD/VFD Alphanumeric Touchpads:** Provide complete system programming and operation control, display system messages and indicate system status.
- **SuperBus 2000 Fixed Display LCD Touchpad:** Provides operation control and user programming access (*not installer or dealer programming*). Displays system messages and indicates system status.

SnapCard™

The following SnapCards expand the system as described:

- **8Z Input SnapCard:** Provides eight additional hardwire zone inputs, of which two are dedicated for 2-wire smoke detectors.
- **4 Output SnapCard:** Provides four form C relay outputs that can be set up to activate other signalling devices, based on system events.
- **4Z Input/2 Output Combo SnapCard:** Provides three standard hardwire zone inputs, one 2-wire smoke detector loop input, and two outputs that can be set up to activate other signalling devices that are based on system events.

Installing the System

This section describes how to install the system control panel. Before starting the installation, plan your system layout and programming using the worksheets provided in Appendix A.

Installing the system consists of the following steps:

- Determining the Panel Location
- Identifying Total System Power and Wire Length Guidelines
- Mounting the Panel
- Identifying Panel Main Components
- Installing Optional SnapCards
- Installing Optional HIMs
- Connecting Detection Devices to Panel Zone Inputs
- Connecting Sirens
- Connecting Touchpads
- Installing an RJ-31X Phone Jack
- Connecting the Phone Line to the Panel with a DB-8 Cord
- Connecting the AC Power Transformer
- Powering Up the Panel

Determine the Panel Location

Before permanently mounting the panel, determine the location using the following guidelines:

- To help reduce wire run lengths and labor, centrally locate the panel with relation to detection devices whenever possible.
- Avoid running wires parallel with electrical wiring or fixtures, such as fluorescent lighting, to prevent wire runs from picking up electrical noise.
- Mount the panel at a comfortable working height (about 45 to 55 inches from the floor to the bottom of the panel, as shown in Figure 1).
- Leave space to the left and right of the panel for wiring, phone jack, and optional modules.
- For installations that include wireless sensors, allow at least 10 inches above the panel cabinet for the antenna.
- Allow at least 24 inches in front of the panel for opening the panel door.

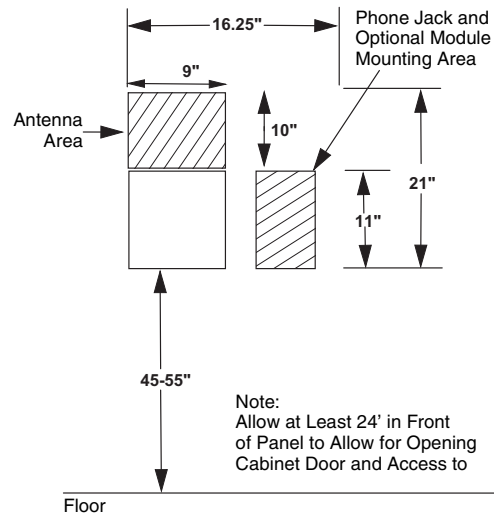


Figure 1. Determining Panel Location

Total System Power and Wire Length Guidelines

Table 1 describes panel voltage/current output ranges. See Appendix A for maximum and standby device current draw.

Table 1: Panel Voltage/Current Output Ranges

Panel Terminal	Voltage Range	Max. Current
4 (+12V)	8.5 - 14.2 VDC 9.1 - 14.2 VDC (UL)	750 mA—non-UL Listed systems 90 mA—UL Listed systems
7 (OUT1/+12)	8.5 - 14.2 VDC	1.25 A at default configuration—non-UL Listed systems 650 mA—UL Listed systems
17 (Z6/2W+)	8.9 - 13.7 VDC	80 mA

Total system wire allowed varies depending on devices powered by the panel, wire length between devices and the panel, and the combined wire length of all devices.

Table 2 describes the maximum wire length allowed between compatible devices and the panel.

Table 2: Maximum Device Wire Lengths

Device	Max. Wire Length to Panel	Wire Type
AC Power Transformer	18 AWG—25 ft.	Stranded
Earth Ground	16 AWG—25 ft.	Solid
Telephone (RJ-31X)	as required	Stranded
Detection Devices	22 or 18 AWG—300 ohms maximum loop resistance + 2k end-of-line	Stranded

Table 2: Maximum Device Wire Lengths (Continued)

Device	Max. Wire Length to Panel	Wire Type
2-Wire Smoke Detectors	22 AWG—330 ft. 18 AWG—830 ft. (based on 10 ohms maximum loop resistance + 2k end-of-line)	Stranded
Sirens	22 AWG—80 ft. 18 AWG—200 ft. when using ITI siren models 13-469 or 13-046	Stranded
SuperBus 2000 2x16 LCD Alphanumeric Touchpad	22 AWG—300 ft. 18 AWG— 750 ft.	Stranded
SuperBus 2000 Fixed Display LCD Touchpad	22 AWG—300 ft. 18 AWG— 750 ft.	Stranded
SuperBus 2000 2x20 LCD Alphanumeric Touchpad	22 AWG—250 ft. 18 AWG— 600 ft.	Stranded
SuperBus 2000 2x20 VFD Alphanumeric Touchpad	22 AWG—250 ft. 18 AWG— 600 ft.	Stranded
SuperBus 2000 Hardwire Input Module	22 AWG—1,800 ft. 18 AWG— 4,500 ft.	Stranded

Mounting the Panel

Use the following procedure to mount the panel to the wall or wall studs.



Make sure you are free of static electricity whenever you work on the panel with the cover open. To discharge any static, first touch the metal panel chassis, then stay in contact with the chassis when touching the circuit board. Using an approved grounding strap is recommended.

➤ **To mount the panel cabinet and circuit board:**

1. Open the panel door and slide it up to remove it from the cabinet. Set the door aside.
2. Remove the knockout to provide access for system wiring (see Figure 2).
3. Feed all device wires through the knockout and place the panel in position against the wall.
4. Level the panel and mark the top and bottom mounting holes (see Figure 2).

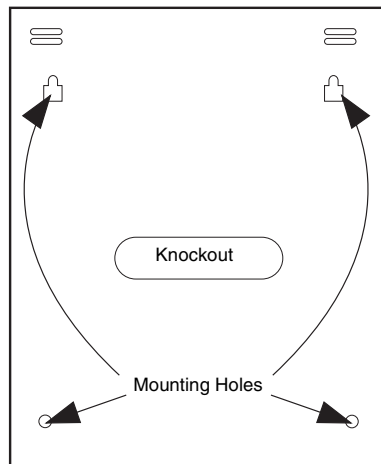


Figure 2. Mounting Holes

5. Install anchors where studs are not present.
6. Partially insert screws into the two top mounting hole locations, then hang the panel on the two screws.
7. Recheck for levelness, insert the two lower screws, and tighten all four mounting screws.

8. Install the antenna housing (included with the panel) by pushing it down into the top left hole of the cabinet until it snaps into place (see Figure 3).
9. Install the circuit board into the cabinet, inserting the loop antenna loop up into the antenna housing (see Figure 3), then secure the circuit board with the four mounting screws (included).

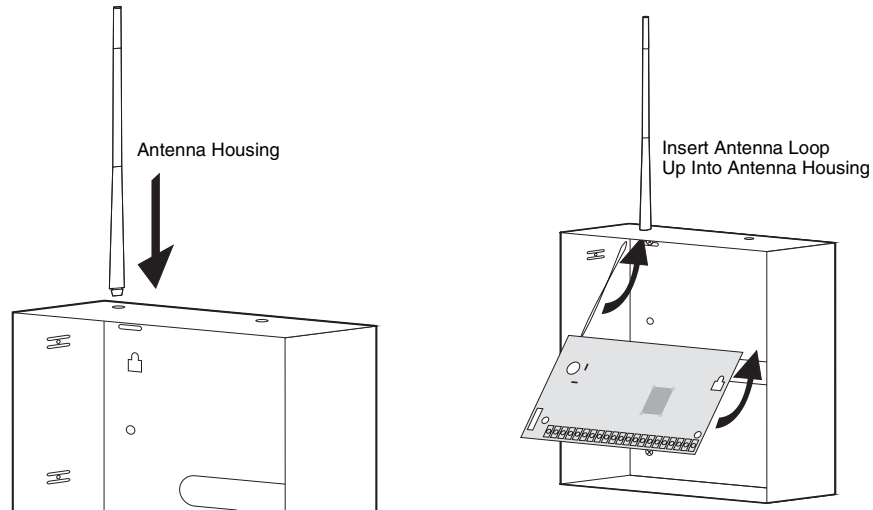


Figure 3. Installing the Antenna Housing and the Circuit Board

Identify Panel Components

Before installing devices and making wiring connections, familiarize yourself with the main components of the panel. Figure 4 shows the main component locations on the circuit board.

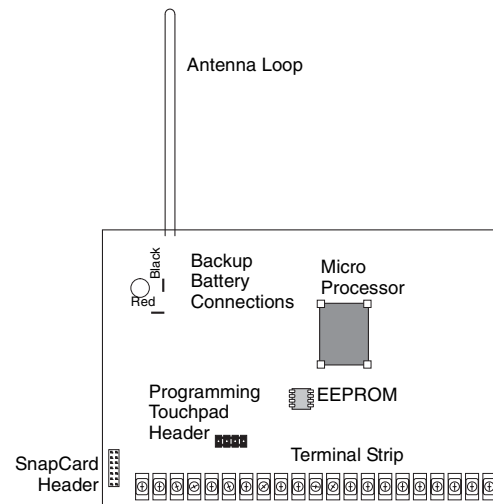


Figure 4. Main Component Locations

Connecting the Panel to Earth Ground

For maximum protection from lightning strikes and transients, connect the lower-right circuit board screw to earth ground as shown in Figure . Use 16-gauge, solid copper wire from an earth grounded cold water pipe clamp to the panel.

Note

For best results, it is recommended that you crimp a spade lug on the wire end at the panel and secure the lug under the circuit board screw as shown in Figure .

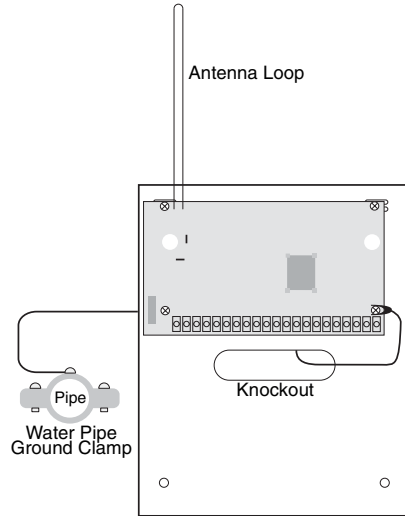


Figure 5. Connecting the Panel to Earth Ground

Installing Optional SnapCards

The SnapCard Header on the lower-left side of the panel accepts one of the following SnapCard models:

- 8Z Input SnapCard—60-757
- 4 Output SnapCard—60-758
- 4Z Input/2 Output Combo SnapCard—60-756

Install the desired SnapCard onto the panel SnapCard Header and secure it in place with two screws, included with the card (Figure 6).

Connect all necessary input/output wiring using the *installation instructions* included with the SnapCard.

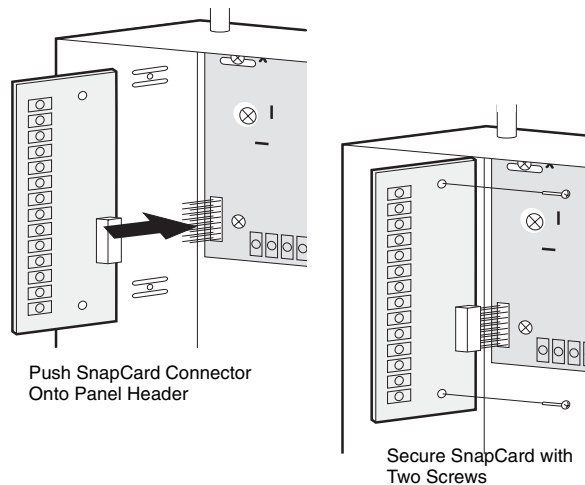


Figure 6. Installing a SnapCard

Note

Use of the HIM with the Concord™ Express panel has not been investigated by UL.

Installing Optional Hardwire Input Modules (HIMs)

Each SuperBus 2000 8-Zone Input Module (60-774) adds eight supervised hardwire zones to the system. Both normally open and normally closed detectors can be wired to module inputs (see Figure 8).

Connect all necessary input/output wiring using the *installation instructions* included with the HIM.

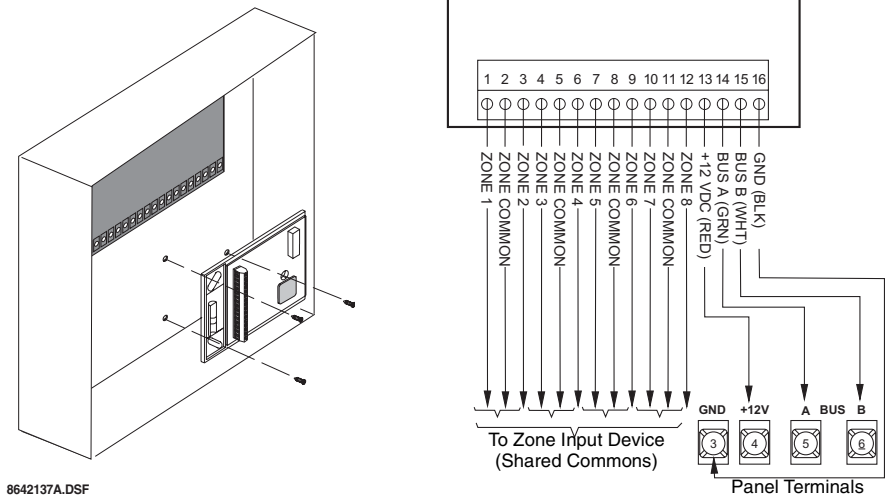


Figure 7. Installing and Connecting the HIM in the Concord Express

Connecting Detection Devices to Panel Zone Inputs

The panel comes with six factory programmed onboard hardwire zones (see “Accessory Modules Menu” on page 40 for factory settings). Zone inputs 1 through 6 are supervised using a 2k-ohm, end-of-line resistor (included with panel) at the last device on the circuit.

Note
Install an end-of-line resistor on all unused, factory programmed, onboard panel zones.

All six zones accept either normally open (N/O) or normally closed (N/C) detection devices (see Figure 8).

The maximum loop resistance for each zone input is 300 ohms, plus the 2k end-of-line (EOL) resistor.

Connecting Intrusion Detection Devices

Figure 8 shows the typical wiring for N/C and N/O door/window intrusion detection.

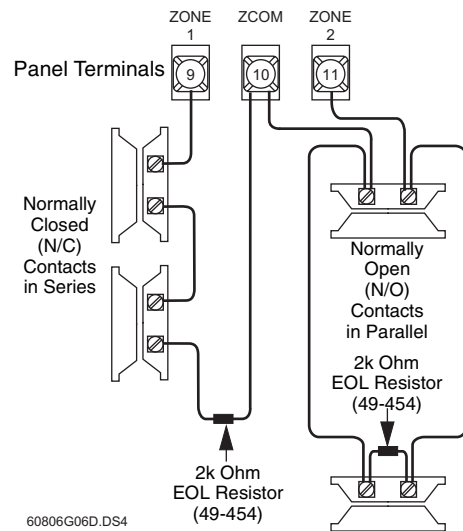


Figure 8. Connecting N/C and N/O Intrusion Detection Circuits

Figure 9 shows the typical wiring for Optex model RX-040 (PI) PIR motion detectors. The minimum available panel voltage for hardwired PIR motion detectors is 8.5 VDC (9.1 VDC for UL Listed systems).

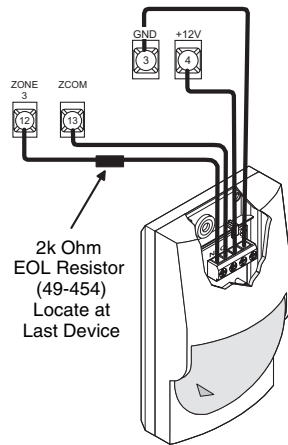


Figure 9. Connecting a PIR Motion Detector

Note

When using 2-wire smoke detectors on Zone 6, the Two-Wire Smoke setting (in program mode) must be turned on **before** entering the LEARN SENSORS menu. See ONBOARD OPTIONS—INPUTS in the section “Programming the Panel” (17) for complete details.

Connecting 2-Wire Smoke Detectors

Zone input 6 can be set up (in program mode) to accept 12 VDC, 2-wire smoke detectors by the following manufacturers:

- System Sensor models 2100D, 2100TD, 2100S, 2100TS, 2400, 2400TH
- Sentrol (ESL) models 429AT, 521B, 521BXT—models 521B and 521BXT require the following dip switch settings: 1-on, 2-off.



Warning

Use only the 2-wire smoke detector models described above. Alarm signals from other detectors may not be processed correctly if the panel has lost AC power and is operating only from the backup battery.

When set up for 2-wire smoke detectors, zone 6 can handle up to 10 smoke detectors with 120 μ A maximum idle current per detector. Maximum total loop current allowed in an alarm condition is 80 mA. The maximum loop resistance for 2-wire smoke detectors connected to zone input 6 is 10 ohms, plus the 2k end-of-line resistor.



Caution

Panel terminal 16 (ZCOM/2W-) cannot be used as a common loop connection for any other zones, when using Zone 6 for 2-wire smoke detectors.

Connect one or more 2-wire smoke detectors to the panel as shown in Figure 10.

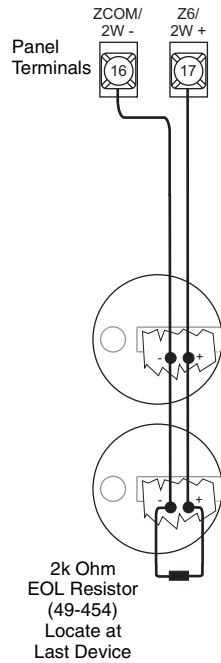


Figure 10. Connecting 2-Wire Smoke Detectors

Connecting 4-Wire Smoke Detectors

Zone inputs 1 through 6 can be used with 4-wire smoke detectors that latch and remain in the alarm state until power is removed and then restored to the detector.

The panel provides this power interruption from panel terminal 8 (OUT2/OC) provided that the output configuration number is set (in program mode) to 01500.

For more information on output configuration numbers, see the section “Programming the Panel” and the tables in Appendix A. Use only 4-wire smoke detectors that operate on 8.5 to 14.2 VDC.

Connect up to five Sentrol (ESL) model 449AT (ITI part no. 13-360) smoke detectors to panel power input as shown in Figure 11.

Note

The Two-Wire Smoke setting (in program mode) must be off when connecting 4-wire smoke detectors to zone 6.

For UL Listed systems, 4-wire smoke detectors cannot be connected to onboard panel zone inputs.

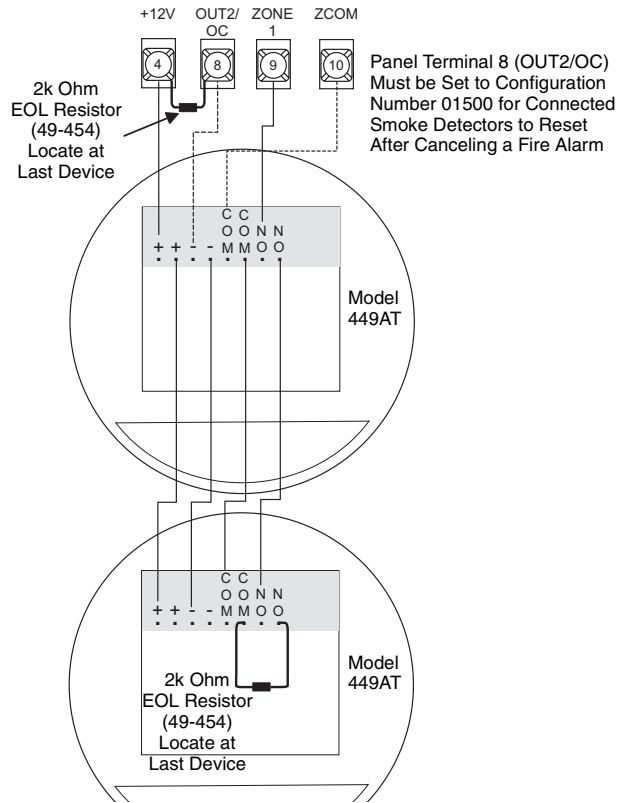


Figure 11. Connecting 4-Wire Smoke Detectors

Connecting Sirens

Note
Install all sirens/speakers indoors, in a concealed location.

Two onboard programmable outputs allow for siren connections when using the default setting of each output. For more information on output configuration numbers, see the section “Programming the Panel” and the tables in Appendix A.

The following describes siren connections using the default settings of each onboard output.

15-Watt, Dual Tone Siren (13-469)

Note
If the backup battery is not connected, or if the configuration of panel terminal 7 is programmed to anything other than the default (00410), then the combined currents of terminal 7 (OUT 1/+12) and terminal 4 (+12V) must not exceed 750 mA.

Panel terminal 7 (OUT1/+12V) is a +12V programmable output. At the default configuration setting (00410), this output can provide up to 1.25 A during an alarm (650 mA for UL Listed systems) if the backup battery is connected.

The default configuration setting (00410) activates the output during any audible alarm, allowing for a siren connection without changing the output configuration number.

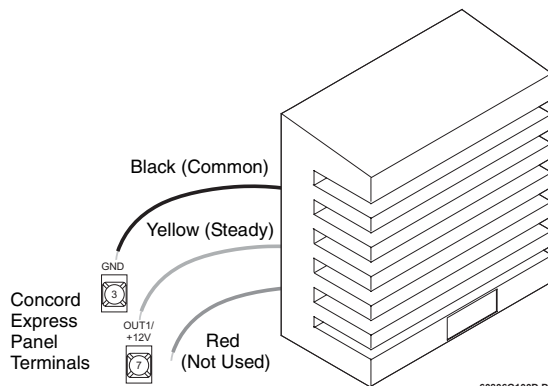


Figure 12. Connecting 15-Watt, Dual-Tone Siren 13-469

Note
For UL Listed systems, Siren Verify must be on.

Note

Some versions of this siren may have two wires of each color. Only one black wire and one yellow wire are needed for panel connections.

Note

For UL Listed systems, Siren Verify must be on and the 2k end-of-line resistor installed.

For UL Listed installations, you can connect only one 15-Watt, Dual-Tone Siren to panel terminals 3 and 7 as shown in Figure 12. For all other installations, connect up to two sirens. This siren does not require an end-of-line resistor.

Hardwire Siren (13-046)

Connect one or two sirens to the panel with supervision as shown in Figure 13. If Siren Verify is turned off (see the section “Programming the Panel”), the 2k end-of-line resistor is not required.

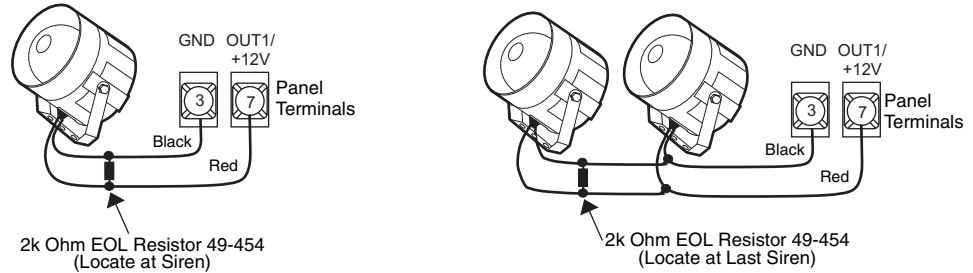


Figure 13. Connecting Hardwire Siren 13-046

Note

Piezo siren connections to terminal 8 require a 2k end-of-line resistor that can be located at the panel since it does not supervise the circuit.

Interior Piezo Siren (30-006)

Panel terminal 8 (OUT2/OC) is an open-collector (switched path-to-ground), programmable output that can handle up to a 200 mA current.

The default setting (01710) activates the output for status and alarm tones, which allows for a piezo siren connection without changing the output configuration number.

Connect the piezo siren to the panel terminals with a 2k end-of-line resistor as shown in Figure 14.

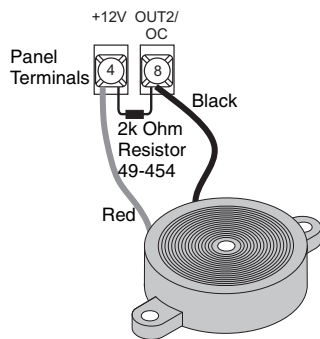


Figure 14. Connecting an Interior Piezo Siren

Note

If using an external power supply instead of panel terminal 4, the supply voltage must be limited to 9.5 VDC maximum and the negative side of the power supply must be connected to panel ground (terminal 3).

Note

If the backup battery is not connected, or if the configuration of panel terminal 7 is programmed to anything other than the default (00410), then the combined currents of terminal 7 (OUT 1/+12) and terminal 4 (+12V) must not exceed 750 mA.

Connecting Siren Drivers, Self-Contained Sirens, and Bells

Power for a siren driver, self-contained siren, or bell can be connected to panel terminals 7 (OUT1/+12V) and 3 (GND).

Panel terminal 7 (OUT1/+12V) is a +12-volt programmable output. At the default configuration setting (00410), this output can provide up to 1.25 A during an alarm (650 mA for UL Listed systems) if the backup battery is connected.

The default configuration setting (00410) activates the output during any audible alarm.

The following siren drivers, self-contained sirens, and bells have been tested and found compatible for use with the panel:

- Moose Models MPI-11 (use only 8-ohm speaker loads), MP-47, MP-47B
- Altronix Model ALSD2 (4- or 8-ohm speaker loads)
- ATW Models DT-24, DS508 (both self-contained)
- Wheelock MB-G6-12 Six-inch, 12V Bell

Refer to the manufacturer’s documentation for installation details.

Connecting Touchpads

- SuperBus 2000 2x16 LCD Alphanumeric Touchpad (60-746-01)
- SuperBus 2000 2x20 LCD Alphanumeric Touchpads (60-803, 60-809)
- SuperBus 2000 2x20 VFD Alphanumeric Touchpad (60-804, 60-810)
- SuperBus 2000 Fixed Display LCD Touchpad (60-820)

Alphanumeric touchpads can be used for installer programming, system operation, and user programming. Fixed display touchpads can be used for system operation and user programming but not for installer programming.

Connect 2x16 and fixed display LCD touchpads to the panel power output and bus terminals as shown in Figure 15.

The 2x20 LCD/VFD touchpads include a supervised hardwire input for connection to a hardwire detection device (see Figure 15 for an example of a normally closed connection).

Connect 2x20 LCD/VFD touchpads to the panel power output and bus terminals as shown in Figure 15.

Note

Be sure to have an alphanumeric (programming) touchpad on hand for on-site programming in installations that do not include one as part of the final system configuration. This programming touchpad can be connected to the Programming Touchpad Header (see Figure 15) using a Programming Touchpad Cable (part no. 60-791).

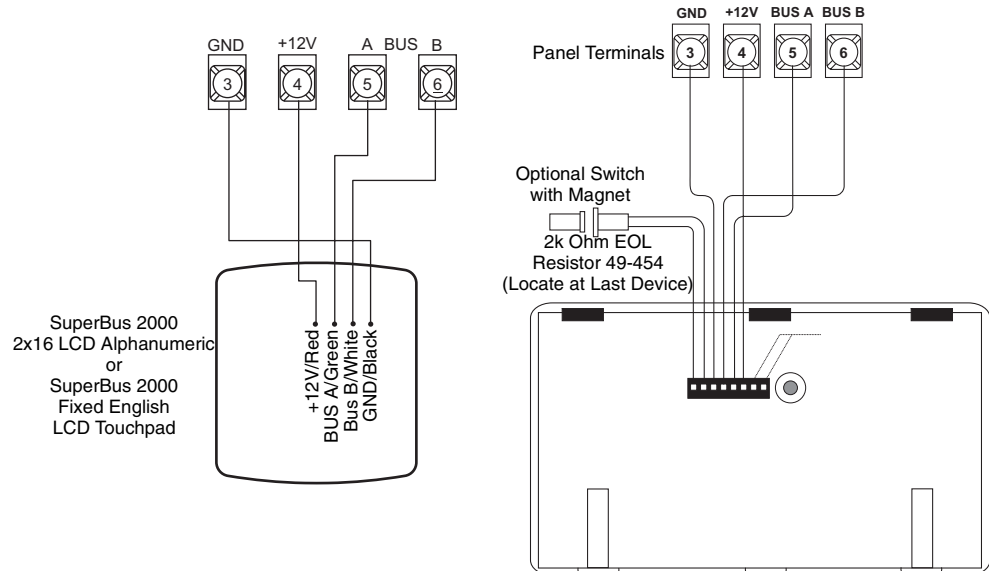


Figure 15. Connecting 2x16 Alphanumeric, Fixed Display LCD Touchpads and 2x20 LCD/VFD Touchpads

Note

The panel cannot be used on a digital or PBX phone line. These systems are designed only for digital type devices that operate anywhere from 5 volts DC and up. The panel uses an analog modem and does not have a digital converter, adapter, or interface to operate with such systems.

Installing an RJ-31X Phone Jack (13-081)

Use the following guidelines when installing an RJ-31X phone jack for system control by phone and central station monitoring.

- Locate the RJ-31X jack (CA-38A in Canada) no further than five feet from the panel.
- The panel must be connected to a standard analog (loop-start) phone line.
- For full line seizure, install an RJ-31X phone jack on the premises phone line so the panel is ahead of all phones and other devices on the line. This allows the panel to take control of the phone line when an alarm occurs even if the phone is in use or off-hook.
- If an analog line is not available, contact your customers' telecommunications specialist and tell him/her you need an analog line off the phone switch (PBX mainframe) or a 1FB (standard business line).

➤ To connect a phone line to the panel using an RJ-31X/CA-38A jack:

1. Run a 4-conductor cable from the TELCO protector block to the jack location (see A in Figure 16).
2. Connect one end of the cable to the jack (see B in Figure 16).

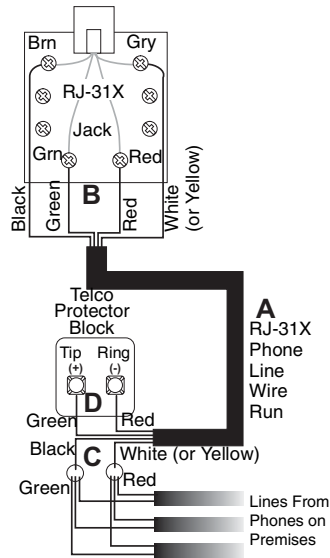


Figure 16. Installing an RJ-31X Phone Jack

3. At the TELCO protector block, remove the premises phone lines (lines from phone jacks on premises) from the block and splice them to the black and white (or yellow) wires of the 4-conductor cable (see C in Figure 16).
4. Connect the green and red wires from the 4-conductor cable to the TIP (+) and RING (-) posts on the block (see D in Figure 16).
5. Check the phones on the premises for dial tone and the ability to dial out and make phone calls. If phones do not work correctly, check all wiring and make corrections where necessary. Proceed to the “Troubleshooting” section of this manual if problems persist.

Note

Connecting the panel to an analog line off the phone switch places the panel ahead of the phone system which prevents panel access from phones on the premises. However, the panel can still be accessed from off-site phones.

Connecting the Phone Line to the Panel with a DB-8 Cord

After installing the RJ-31X jack, you are ready to connect the phone line to the panel. A DB-8 cord (not included) uses a plug at one end for connecting to the RJ-31X module and flying leads on the other end for panel terminal connections.

➤ **To connect the DB-8 cord to the panel terminals and RJ-31X jack:**

1. Connect the green, brown, gray, and red flying leads from the DB-8 cord to panel terminals 18, 19, 20, and 21 (see Figure 17).
2. Insert the DB-8 cord plug into the RJ-31X (see Figure 17).

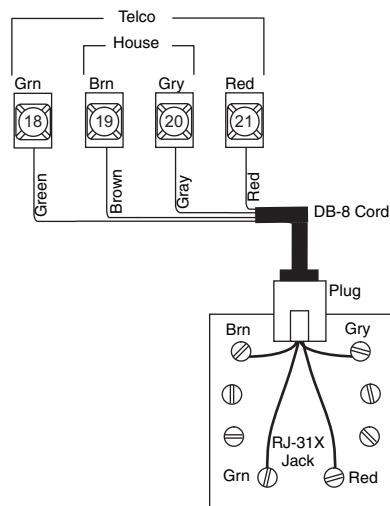


Figure 17. Connecting the DB8 Cord

3. Check the phones on the premises for dial tone and the ability to dial out and make phone calls. If phones do not work correctly, check all wiring and correct where necessary. Proceed to the “Troubleshooting” section of this manual if problems persist.

Connecting the AC Power Transformer

The panel must be powered by a plug-in stepdown transformer that supplies 16.5 VAC, 25 VA (60-822 or 60-679-CN). Connect the power transformer to the panel as shown in Figure 18.

Note

If you plan on connecting an alphanumeric touchpad to the programming touchpad header on the panel, do not connect it until after the panel is powered up. Refer to “Entering Programming Mode.”



Do not plug in the power transformer at this time. The panel must be powered up using the sequence of steps described in the following section, “Power Up the Panel.”

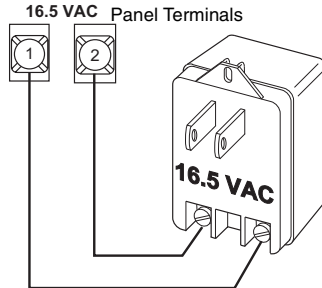


Figure 18. Connecting the Power Transformer

Powering Up the Panel

After installing SnapCards and wiring all devices to the panel, you are ready to apply AC and backup battery power to the panel.

Note

Without AC power, shut-down will occur if battery voltage falls below 10.2 VDC.

➤ To power up the panel:

1. Connect the red and black battery leads (included with panel) to the lugs located in the upper-left area of the panel circuit board (see Figure 19).

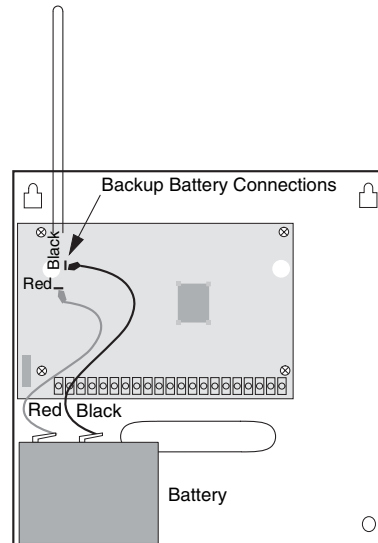


Figure 19. Connecting the Backup Battery

2. Connect the battery leads to the battery terminals as shown.
3. Plug the transformer into an outlet that is not controlled by a switch or ground fault circuit interrupt (GFCI).

Alphanumeric touchpads display `*****`, `SCANNING BUS DEVICES`, then a date and time display. Fixed display touchpads briefly show all text, no text, `BUS SCAN`, then a time display.

4. To permanently mount the transformer, unplug it and remove the existing screw securing the AC outlet cover.
5. Hold the outlet cover in place and plug the transformer into the lower receptacle.
6. Use the screw supplied with the transformer to secure the transformer to the outlet cover.

Note

If touchpads don't display anything, immediately unplug the transformer and disconnect the backup battery. Refer to the "Troubleshooting" section.



Warning

Use extreme caution when securing the transformer to a metal outlet cover. You could receive a serious shock if a metal outlet cover drops down onto the prongs of the plug while you are securing the transformer and cover to the outlet box.

Programming the Panel

This section describes how to program all settings found in programming mode. For on-site system programming, an alphanumeric touchpad is required.

Entering Programming Mode

Enter programming mode on site from an alphanumeric touchpad using an installer/dealer code (default = 4321). The system can be put into program mode only when it is disarmed.

➤ **To enter programming mode using an alphanumeric touchpad connected to the panel terminals:**

1. Make sure the system is disarmed.
2. Press **[8] + [0][0][0][0] + [0] + [0]**. The touchpad shows *SYSTEM PROGRAMMING*.

➤ **To enter programming mode using a programming touchpad:**

1. Connect the red, black, green, and white wires from the Programming Touchpad Cable (60-791) to the power and bus wires on an alphanumeric touchpad while matching the wire colors on each.
2. Make sure the system is powered up and disarmed.
3. Connect the plug on the cable onto the panel programming touchpad header (see Figure 20).

Note

If the programming touchpad is connected before the panel is powered up, it will be added (learned) into panel memory as a permanent touchpad.

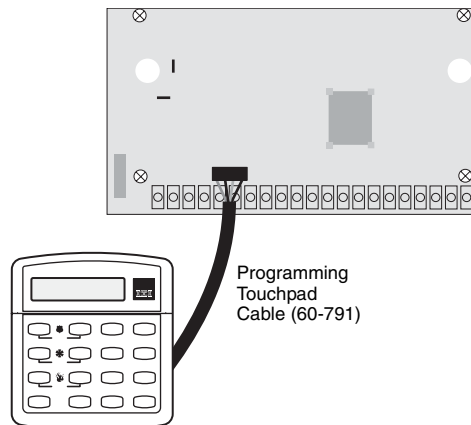


Figure 20. Connecting a Programming Touchpad

4. Press **[8] + [4][3][2][1] + [0] + [2]**. The touchpad sounds one short beep and the display shows a flashing star. Press **[*]** and the display shows *SERVICE TOUCHPAD ACTIVE*.
5. Press **[8] + [4][3][2][1] + [0] + [0]** and the display shows *SYSTEM PROGRAMMING*.
6. After programming is completed, simply disconnect the touchpad from the panel header.

Touchpad Button Programming Functions

In program mode, the touchpad buttons let you navigate to all installer programming menus for configuring the system. Table 3 describes the touchpad button functions in program mode.

Table 3: Alphanumeric Touchpad Buttons

Button	Programming Function
#	Selects menu item or data entry.
*	Deselects menu item or data entry (if pressed before #).
[A] & [B]	Scroll through available options at the current menu tier. Also scroll through sensor text options during sensor text programming.
[C]	Enters pauses when programming phone numbers.
[D]	Deletes certain programmed settings.
[0] thru [9]	Enter numeric values wherever needed.
[1] & [2]	Select off (1) or on (2) wherever needed.
[1] thru [6]	Press and hold to enter alphabetical characters A thru F for account numbers.
[7] or [9]	Press and hold to enter * (7) or # (9) for phone numbers.

Moving Through Program Mode Tiers and Menus

There are two basic tiers of programming menus. Tier 1 menus are accessible immediately after entering program mode (see Figure 21).

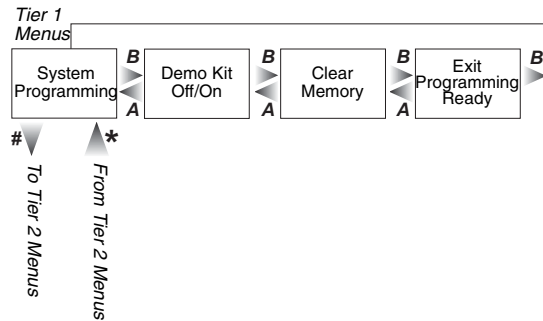


Figure 21. Tier 1 Programming Menus

Arrows pointing right represent pressing [B], arrows pointing left represent pressing [A].

The arrow below the *SYSTEM PROGRAMMING* menu represents pressing # to move to tier 2 programming menus.

Only when *SYSTEM PROGRAMMING* is displayed can you advance to tier 2 menus (see Figure 22).

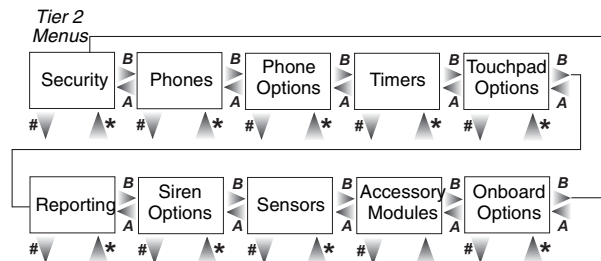


Figure 22. Tier 2 Programming Menus

Again, arrows pointing right represent pressing [B], arrows pointing left represent pressing [A].

Arrows below each menu represent pressing # (or *) to advance to (or back up from) those settings that pertain to that menu. Only when a specific menu is displayed can you advance to those settings. For example, pressing # from the *SENSORS* menu gives you access to learning sensors, programming sensor text, deleting sensors, and viewing sensor programming.

Settings in tier 2 menus can also be accessed by entering shortcut numbers. See the section, “Programming Tier 2 Menu Items” for complete details.

Programming Tier 1 Menu Items

This section guides you through programming tier 1 menu items as they appear in sequence. The exact order you need to follow will depend on whether you’re installing a new system or changing the programming of an existing system.

Demo Kit Mode	System Programming (Default = Off)
<p>This setting determines whether the panel is used for a standard installation (off) or as a demo kit (on). Turning on this feature and performing a memory clear changes the following settings:</p> <ul style="list-style-type: none"> • System Master Code = 1234 • User Code 00 = 1001 (standard user code capabilities) • User Code 01 = 1002 (standard user code capabilities, bypass sensors) • User Code 04 = 1122 (standard user code capabilities, system tests) • Zone 1 (hardwire) = Group 10, Front Door • Zone 2 (hardwire) = Group 13, Bedroom Window • Zone 3 (hardwire) = Group 17, Living Room PIR • Zone 4 (hardwire) = Group 01, Panic • Zone 5 (wireless) = Group 01, Keychain Touchpad • Zone 6 (wireless) = Group 13, Kitchen Window • COMM FAILURE = off • Entry Delay = 8 seconds • Exit Delay = 8 seconds • Extended Delay = 1 minute • Siren Timeout = 2 minutes • Status Beeps = on (all touchpads) • Central Station Reporting = sensors learned into groups 01 and 03, Duress code use, and phone test ([8] + [C][0][0][E] + [2]) 	<p>➤ To turn Demo Kit Mode On or Off:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DEMO KIT OFF/ON</i> (<i>current setting</i>), press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows <i>DEMO KIT OFF/ON</i> (<i>new setting</i>). 3. Clear panel memory to enable the demo kit mode (see next menu).

Clear Memory (System Programming)	System Programming
<p>Clearing memory with the Dealer Code deletes all existing programming except the Dealer Code.</p> <p>If the Dealer Code HAS NOT been set, clearing the memory with the Installer Code deletes all existing programming.</p> <p>If the Dealer Code HAS been set, clearing the memory with the Installer Code deletes all existing programming except:</p> <ul style="list-style-type: none"> • Dealer Code • Downloader Code • CS Phone 1 • CS Phone 2 	<p>➤ To clear Panel Memory:</p> <ol style="list-style-type: none"> 1. With the system in program mode, press [8] until the display shows <i>CLEAR MEMORY</i>. 2. Press [#] and the display shows <i>ENTER CODE TO CLEAR MEMORY</i>. 3. Enter the 4-digit installer [C][0][0][E] (or dealer if programmed) + [#]. <p>After about one second, the system restarts and the panel scans the bus to learn all bus devices. If the system doesn’t respond as described, repeat step 3.</p>

Programming Tier 2 Menu Items

This section guides you through programming tier 2 menu items as they appear in sequence. Each menu on tier 2 represents a group of settings related to the menu name. Refer to Figure 22 for the menus available on tier 2.

Using Shortcut Numbers

To go directly to a setting in tier 2, you can enter the shortcut number for that setting. Shortcut numbers in this manual appear in parenthesis (), next to the setting name. For example this heading shows the Downloader Code shortcut to be 0000.

Downloader Code (0000)	System Programming
-------------------------------	---------------------------

Shortcut numbers can be used from any setting location within tier 2.

➤ **To advance to tier 2 program menus:**

- ◆ With the system in program mode and the display showing *SYSTEM PROGRAMMING*, press **#** once. The display should show *SECURITY*.

Security Menu

The *SECURITY* menu lets you choose whether security settings affect the whole system (global) or a specific partition.

Important !

Each security access code (Installer, Dealer, System Master, or User) must be unique. Do not use the same combination of numbers for any two codes.

➤ **To access global or partition security menu items:**

1. With the display showing *SECURITY*, press **#**. The display should show *GLOBAL*.
2. Press **#** again to advance to global settings
OR
Press **A** or **B** to display *PARTITION 1*, then press **#** to advance to partition 1 settings.

The following describes how to program the security settings that appear under *GLOBAL*.

Downloader Code (0000)	Security-Global (Default = 12345)
-------------------------------	------------------------------------------

The 5-digit downloader code is used in conjunction with downloader programming. The down-loader operator must have the panel account number and downloader code in order to perform any programming.

Note

The Downloader Code cannot be deleted from panel memory. To change the Downloader Code to its default setting, enter 12345 in the procedure to the right. The Downloader Code will be reset to defaults during a Memory Clear only if the Dealer Code is not set OR if the Dealer Code is used to initiate the Memory Clear.

➤ **To program a Downloader Code:**

1. With the display showing *DOWNLOADER CODE nnnnn (current code)*, enter the desired 5-digit code, + **#**. The display flashes the entered code.
2. Press **#** and the display shows *DOWN-LOADER CODE nnnnn (new code)*.

Installer Code (0001)	Security-Global (Default = 4321)
------------------------------	-----------------------------------------

The 4-digit installer code is used for entering program mode and changing system settings. If a dealer code is programmed, only those settings not associated with phone numbers can be changed.

Note

The Installer Code cannot be deleted or cleared from panel memory. To change the Installer Code to its default setting, enter 4321 in the procedure above.

➤ **To program an Installer Code:**

1. With the display showing *INSTALLER CODE nnnn (current code)*, enter the desired 4-digit code + **#**. The display flashes the entered code.
2. Press **#** and display shows *INSTALLER CODE nnnn (new code)*.

Dealer Code (0002)	<i>Security-Global (Default = none)</i>
<p>The 4-digit dealer code is used to prevent unauthorized persons from changing the programmed central station phone numbers and the Downloader Access Code. When this feature is enabled, central station phone numbers and the Downloader Code cannot be changed (unless you enter the program mode by using the dealer code). All other system settings are still accessible by entering the program mode with the installer code.</p>	<p>➤ To program a Dealer Code:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DEALER CODE ****</i>, enter the desired 4-digit code. The display flashes the entered setting. 2. Press # and the display shows the new code. <p>➤ To delete a Dealer Code:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DEALER CODE nnnn (current code)</i>, press 0. The display shows <i>DEALER CODE ****</i>. <p>Note The Dealer Code cannot be deleted by clearing panel memory.</p>

SIA False Alarm Reduction (0003)	<i>Security-Global (Default = on)</i>
<p>Controls the following settings that are required by the SIA False Alarm Reduction Standard:</p> <ul style="list-style-type: none"> • Arming level changes made from wireless touchpads and keychain touchpads are sounded (beeps) on exterior siren output (on) OR are not sounded on exterior siren output (off). <p>Note The siren output must be configured for "Exterior Siren" (016xx) for the arming level beeps to be annunciated.</p> <ul style="list-style-type: none"> • The Arming Always Silent feature is disabled for users if this setting is on OR can be controlled by users if the setting is off. Silent Arming on Demand is not affected. 	<p>➤ To turn SIA False Alarm Reduction off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SIA FALSE ALARM (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

The following describes how to program the security settings that appear under *PARTITION 1*.

Account Number (0010)	<i>Security-Partition 1 (Default = 00000)</i>
<p>The account number is used as panel (or customer) identification for the central monitoring station. The panel sends the account number every time it reports to the central station. Account numbers must be 1 to 10 characters long.</p> <p>Alpha characters A-F can be assigned to the account number by pressing and holding buttons 1-6 respectively until the character appears.</p>	<p>➤ To program an Account Number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ACCOUNT NUMBER nnnnn (current number)</i>, enter the desired account number. The display flashes the entered setting. 2. Press # and the display shows the new number.

Quick Arm (0011)	<i>Security-Partition 1 (Default = off)</i>
<p>Quick Arm allows system arming without using an access code. When this feature is on, the system arming level can be increased from Level 1-OFF to LEVEL 2-STAY, from Level 1-OFF to LEVEL 3-AWAY, or from Level 2-STAY to LEVEL 3-AWAY without entering an access code. A valid access code is still required to decrease the arming level or disarm the system.</p>	<p>➤ To turn Quick Arm off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>QUICK ARM OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Quick Exit (0012)	<i>Security-Partition 1 (Default = on)</i>
<p>This setting determines whether or not users can open and close a standard entry or exit door without causing an alarm (while the system is armed). This feature would be useful if the user wanted to go out to get the morning paper while the system was armed. This feature also allows the user to leave the armed premises without having to disarm and rearm the system.</p> <p>Note For UL Listed systems, Quick Exit must be turned off.</p> <p>When this feature is on, pressing [Q] on a touchpad (while the system is armed) starts a 2-minute timer that allows one standard entry or exit door (sensor groups 10 and 19 only) to be activated once (opened, then closed). When this feature is turned off, the system must be disarmed before opening any protected door.</p>	<p>➤ To turn Quick Exit off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>QUICK EXIT OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Exit Extension (0013)	<i>Security-Partition 1 (Default = on)</i>
<p>This setting determines whether or not the user can reenter and exit again through an entry or exit delay door (without disarming and rearming the system). This helps prevent exit faults and false alarms by allowing users to reenter the armed premises for a forgotten item.</p> <p>When Exit Extension is on, the panel restarts the exit delay timer if the user reenters the premises through a designated delay door before the exit delay time expires.</p> <p>When Exit Extension is off, the exit delay timer does not restart if the user reenters the premises. This forces the user to disarm the system to avoid setting off an alarm.</p>	<p>➤ To turn Exit Extension off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>EXIT EXTENSION OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Auto Stay Arming (0014)	<i>Security-Partition 1 (Default = on)</i>
<p>This setting determines whether or not the system automatically arms to STAY (level 2) if the user arms the system to AWAY (level 3) without exiting the premises. This can help prevent accidental alarms by deactivating interior motion sensors during occupied arming periods.</p> <p>Note Arming the system to AWAY with No Delay overrides the Auto Stay Arming feature.</p> <p>With the feature turned on, the user arms the system to AWAY. Touchpads (and other status sounders) emit one exit delay beep every four seconds, then one every second during the last 10 seconds. If the exit delay time expires with no standard delay sensor activation, the system automatically arms to STAY.</p>	<p>➤ To turn Auto Stay Arming off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>AUTO STAY ARMING OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Keyswitch Sensor (0015)	Security-Partition 1 (Default = none)
<p>This feature lets users arm and disarm the system using either a keyswitch wired to a hardware zone input or a wireless door or window sensor.</p> <p>For example, if sensor 1 is designated as the keyswitch sensor and the system is disarmed, then tripping sensor 1 arms the system to AWAY. If the system is armed to STAY or AWAY, tripping sensor 1 disarms the system. The panel reports opening, closing, and force armed reports (if these features are turned on) to the central monitoring station.</p> <p>Note A bypassed keyswitch sensor cannot arm or disarm the system.</p> <p><i>During an audible alarm, keyswitch sensors can disarm the system (which sends a cancel report to the central monitoring station), but cannot arm the system. The system can be armed only after siren timeout expires.</i></p> <p><i>Keyswitch sensors test the same as any other sensor and do not arm or disarm the system during a sensor test.</i></p>	<p>➤ To assign a Keyswitch Sensor:</p> <ol style="list-style-type: none"> 1. With the display showing <i>KEYSWITCH SENSOR n (current sensor number)</i>, enter the desired sensor number (01-24). The display flashes the entered sensor number. 2. Press # and the display shows the new number.

Duress Code (0016)	Security-Partition 1 (Default = none)
<p>The duress code is a unique 4-digit access code that allows users to operate the system and, at the same time, instructs the panel to send a silent alarm report to the central station.</p> <p>Do not use a duress code unless it is absolutely necessary. Using duress codes often results in false alarms due to code entry errors. If a duress code is absolutely necessary, use it with an Interrogator[®] audio verification module (AVM) to reduce false alarms and accidental dispatches.</p> <p>Note <i>To use this feature, the Duress Option setting under the REPORTING—PARTITION 1 menu must be turned on.</i></p>	<p>➤ To program a Duress Code:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DURESS CODE ****</i>, enter the desired 4-digit duress code. The display flashes the entered setting. 2. Press # and the display shows the new code. <p>➤ To delete a Duress Code:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DURESS CODE mmm (current code)</i>, press 0. The display shows <i>DURESS CODE ****</i>.

Phones Menu

The PHONES menu lets you set up central station reporting for the system (global) and pager reports (partition specific). The following describes how to program the settings that appear under *CS PHONE 1-2*.

Phone Number (0100-cs phone 1, 0110-cs phone 2)	Phones-CS Phone 1-2 (Default = none)
<p>(Default = none) This setting is used for programming the central station receiver phone number. Phone numbers can be 1-24 digits long, including pauses or * and # characters. To enter pauses, press 0. To enter *, press and hold * for one second. To enter #, press and hold # for one second.</p> <p>Note <i>The PHONE NUMBER menus are not accessible if a Dealer Code is programmed and the Installer Code is used to enter installer programming mode. To access these menus when a Dealer Code is programmed, you must enter installer programming mode using the Dealer Code. A phone number must be programmed for UL 1635 listed installations.</i></p>	<p>➤ To program a Central Station Phone Number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER _ (or current number)</i>, enter the desired phone number. The display flashes the entered number. 2. Press # and the display shows the new number. <p>Note <i>Call-waiting services should be disabled to prevent interruptions to panel communication to the central monitoring station (or pager). To program a dialing prefix that disables call-waiting, see the Call Wait Cancel setting under the menu PHONE OPTIONS—GLOBAL.</i></p> <p>➤ To delete a Central Station Phone Number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER n (current number)</i>, press 0. The display shows <i>PHONE NUMBER _</i>.

High Level Rpts (0101-cs phone 1, 0111-cs phone 2)	<i>Phones-CS Phone 1-2 (Default: CS Phone 1=on, CS Phone 2=off)</i>
<p>When this setting is on, the panel reports to the central station events that involve a high-level security risk, including the following conditions:</p> <ul style="list-style-type: none"> • Fire, Police, Auxiliary, Duress, and Freeze alarms • No Activity • Receiver Failure (or jam) • System Tamper (40 incorrect keystrokes or touchpad supervisory), • Entering or exiting Sensor Test mode <p>Note For UL 1635 listed installations, this feature must be set to on for the programmed phone number.</p>	<p>➤ To turn High-Level Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>HIGH LEVEL RPTS OFF/ON (current setting)</i>, press <input type="checkbox"/> (off) or <input type="checkbox"/> (on). The display flashes the entered setting. 2. Press <input type="checkbox"/> and the display shows the new setting.

Low Level Rpts (0102-cs phone 1, 0112-cs phone 2)	<i>Phones-CS Phone 1-2 (Default: CS Phone 1=on, CS Phone 2=off)</i>
<p>When this setting is on, the panel reports non-alarm conditions to the central station, including the following conditions:</p> <ul style="list-style-type: none"> • Force Armed • Hardwire Zone Trouble (open or short) • Supervisory (wireless devices) • Low Battery (wireless devices) • Other non-alarm related conditions <p>Note For UL 1635 listed installations, this feature must be set to on for the programmed phone number.</p>	<p>➤ To turn Low-Level Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LOW LEVEL RPTS OFF/ON (current setting)</i>, press <input type="checkbox"/> (off) or <input type="checkbox"/> (on). The display flashes the entered setting. 2. Press <input type="checkbox"/> and the display shows the new setting.

Open/Close Rpts (0103-cs phone 1, 0113-cs phone 2)	<i>Phones-CS Phone 1-2 (Default=off)</i>
<p>When this setting is on, the panel sends a report when the system is armed (closed) or disarmed (opened).</p> <p>Note To use this feature, the <i>Opening Reports and Closing Reports</i> settings under the <i>REPORTING</i> menu must be turned on.</p>	<p>➤ To turn Opening/Closing Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>OPEN/CLOSE RPTS OFF/ON (current setting)</i>, press <input type="checkbox"/> (off) or <input type="checkbox"/> (on). The display flashes the entered setting. 2. Press <input type="checkbox"/> and the display shows the new setting.

Backup (0104-cs phone 1, 0114-cs phone 2)	<i>Phones-CS Phone 1-2 (Default: CS Phone 1=on, CS Phone 2=off)</i>
<p>This setting determines whether or not the panel uses another programmed central station phone number for reporting if three initial attempts are unsuccessful.</p> <p>CS Phone 1 is backed up by CS Phone 2, and CS Phone 2 is backed up by CS Phone 1. The panel makes up to 16 attempts (8 per phone number), alternating between the two programmed phone numbers.</p> <p>For example, if Backup is on and three failed reporting attempts occur using CS Phone 1, the panel switches to CS Phone 2 for three more reporting attempts. If these attempts fail, the panel switches back to CS Phone 1 for five more reporting attempts and, if necessary, switches back to CS Phone 2 for five final attempts.</p>	<p>➤ To turn Backup off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BACKUP OFF/ON (current setting)</i>, press <input type="checkbox"/> (off) or <input type="checkbox"/> (on). The display flashes the entered setting. 2. Press <input type="checkbox"/> and the display shows the new setting.

Reporting Format (0105-cs phone 1, 0115-cs phone 2)	<i>Phones-CS Phone 1-2 (Default=all CID)</i>
<p>This setting determines whether the panel uses the SIA or CID (Contact ID) reporting format for central station communication.</p>	<p>➤ To select SIA or CID Reporting Format:</p> <ol style="list-style-type: none"> 1. With the display showing <i>REPORTING FORMAT SIA/CID (current setting)</i>, press 1 (for SIA) or 2 (for CID). The display flashes the entered setting. 2. Press # and the display shows the new setting.

The following describes how to program the phone settings that appear under *PAGER PHONE 1-3*.

Phone Number (0120-pager 1, 0130-pager 2, 0140-pager 3)	<i>Phones-Pager Phone 1-3 (Default=none)</i>
<p>This setting is used for programming a phone number that communicates to a pager. Phone numbers can be 1-24 digits long, and can include pauses or * and # characters.</p> <p>To enter pauses, press 0. To enter *, press and hold 7 for one second. To enter #, press and hold 9 for one second.</p> <p>Note <i>Call-waiting services should be disabled to prevent interruptions to panel communication to the central monitoring station (or pager). To program a dialing prefix that disables call-waiting, see the Call Wait Cancel setting under the menu PHONE OPTIONS—GLOBAL.</i></p>	<p>➤ To program a Pager Phone Number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER _ (or current number)</i>, enter the desired pager phone number including pauses. The display flashes the entered number. 2. Press # and the display shows the new number. <p>➤ To delete a Pager Phone Number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER _ (current number)</i>, press 0. The display shows <i>PHONE NUMBER _</i>.

High Level Rpts (0121-pager 1, 0131-pager 2, 0141-pager 3)	<i>Phones-Pager Phone 1-3 (Default=on)</i>
<p>When this setting is on, the panel reports to the pager events that involve a high-level security risk, including the following conditions:</p> <ul style="list-style-type: none"> • Fire, Police, Auxiliary, Duress, and Freeze alarms • No Activity • Receiver Failure (or jam) • System Tamper (40 incorrect keystrokes or touchpad supervisory), • Entering or exiting Sensor Test mode 	<p>➤ To turn High-Level Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>HIGH LEVEL RPTS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Low Level Rpts (0122-pager 1, 0132-pager 2, 0142-pager 3)	<i>Phones-Pager Phone 1-3 (Default=off)</i>
<p>When this setting is on, the panel reports non-alarm conditions to the pager, including the following conditions:</p> <ul style="list-style-type: none"> • Force Armed • Hardwire Zone Trouble (open or short) • Supervisory (wireless devices) • Low Battery (wireless devices) • Other non-alarm related conditions 	<p>➤ To turn Low-Level Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LOW LEVEL RPTS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows <i>LOW LEVEL RPTS OFF/ON (new setting)</i>.

Open/Close Rpts (0123-pager 1, 0133-pager 2, 0143-pager 3)	<i>Phones-Pager Phone 1-3 (Default=off)</i>
<p>When this setting is on, the panel sends a report when the system is armed (closed) or disarmed (opened).</p> <p>Note To use this feature, the Opening Reports and Closing Reports settings under the REPORTING menu must be turned on.</p>	<p>➤ To turn Opening/Closing Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>OPEN/CLOSE RPTS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Latchkey Rpts (0124-pager 1, 0134-pager 2, 0144-pager 3)	<i>Phones-Pager Phone 1-3 (Default=on)</i>
<p>This setting determines whether or not the panel reports to a pager when the system is disarmed by using the latchkey modifier (6) and latchkey designated access code.</p>	<p>➤ To turn Latchkey reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LATCHKEY REPORTS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Streamlining (0125-pager 1, 0135-pager 2, 0145-pager 3)	<i>Phones-Pager Phone 1-3 (Default=on)</i>
<p>This setting determines whether the panel includes (off) or excludes (on) the account number when reporting to a pager.</p>	<p>➤ To turn Streamlining off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>STREAMLINING OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

The following describes how to program the phone settings that appear under *DOWNLOADER PHONE*.

Phone Number (0150)	<i>Phones-Downloader (Default=none)</i>
<p>This setting is used for entering the phone number of a computer used for programming the panel from off-site. Phone numbers can be 1-24 digits long, including pauses or * and # characters. To enter pauses, press 0. To enter *, press and hold 7 for one second. To enter #, press and hold 9 for one second.</p> <p>Note Call-waiting services should be disabled to prevent interruptions to panel communication to the central monitoring station (or pager). To program a dialing prefix that disables call-waiting, see the Call Wait Cancel setting under the menu <i>PHONE OPTIONS—GLOBAL</i>.</p>	<p>➤ To program a downloader phone number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER (current number)</i>, enter the desired phone number. The display flashes the entered number. 2. Press # and the display shows the new setting. <p>➤ To delete a downloader phone number:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE NUMBER _ (current number)</i>, press 0. The display shows <i>PHONE NUMBER _</i>.

Phone Options Menu

The *PHONE OPTIONS* menu lets you set up system phone access and communications that affect the whole system (global) or a specific partition.

The following describes how to program the phone option settings that appear under *GLOBAL*.

Phone Test (02000)	<i>Phones Options-Global (Default=on)</i>
<p>This setting determines if the user can test the communication from the panel to the central station (or a pager). When this feature is on, the user can test communications at any time by entering [8] + [C][0][0][E] + [2].</p> <p>Note For UL 1635 listed installations, this feature must be set to on.</p>	<p>➤ To turn the Phone Test setting off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE TEST OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Auto Phone Test (02001)	<i>Phones Options-Global (Default=off)</i>
<p>This setting determines if the panel sends a phone test automatically to the central station (or a pager) on a predetermined schedule. (Refer to the “Phone Test Freq.” and “Next Phone Test” settings found under <i>TIMERS—GLOBAL</i>).</p> <p>Note For UL 1635 listed installations, this feature must be set to on.</p>	<p>➤ To turn Automatic Phone Test off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>AUTO PHONE TEST OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Auto Test Reset (02002)	<i>Phones Options-Global (Default=on)</i>
<p>This setting determines whether or not the Auto Phone Test interval is reset after any successful report to the central monitoring station. Refer to the “Phone Test Freq.” and “Next Phone Test” settings found under <i>TIMERS—GLOBAL</i>.</p> <p>When this feature is on, the panel considers any successful report to the central station to be a successful phone test. Thus, any successful panel report to the central monitoring station resets the Next Phone Test setting to the Phone Test Freq. value. The panel only conducts an Auto Phone Test if no other reports are made during the Phone Test Freq. time period.</p> <p>When this feature is off, an Auto Phone Test is always conducted according to the Phone Test Freq. setting, even if the panel makes other reports to the central monitoring station during that time period.</p> <p>Note Phone Test Freq must be set to 2 or higher for this feature to work.</p>	<p>➤ To turn Auto Test Reset off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>AUTO TEST RESET OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Comm Failure (02003)	<i>Phones Options-Global (Default=on)</i>
<p>When this setting is on, the panel activates trouble beeps to alert users on the premises that communication to the central station has failed. Failure notification occurs after the third unsuccessful reporting attempt to the central station (or pager).</p> <p>Note For UL 1635 listed installations, this feature must be set to on.</p>	<p>➤ To turn Communication Failure notification off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>COMM FAILURE OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.


DTMF Dialing (02004)	<i>Phones Options-Global (Default=on)</i>
<p>This setting determines whether the panel uses DTMF tones (on) or pulse (off) for dialing programmed phone numbers.</p>	<p>➤ To turn DTMF Dialing off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DTMF DIALING OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Dialer Abort (02005)	<i>Phones Options-Global (Default=on)</i>
<p>This setting determines whether or not users can stop the first dialing attempt of the panel (within the Dialer Abort Delay time setting) to report to the central station. When this feature is on, alarm reports from sensors in groups 00-20, 34, and 35 can be aborted by entering $\square\square\square\square\square$ (or $\square + \square\square\square\square\square$) within the Dialer Abort Delay time setting (defaulted to 30 seconds). Cancel and restoral reports from these sensor groups are also aborted if the related alarm report was aborted. Other reports that can be aborted include System Alarm Tamper/Cancel, No Activity Alarm/Cancel, Touchpad Police and Auxiliary Panic/Cancel, Recent Closing, and Two Trip Error. Fire alarm reports to the central station cannot be aborted.</p>	<p>➤ To turn Dialer Abort off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DIALER ABORT OFF/ON (current setting)</i>, press \square (off) or \square (on). The display flashes the entered setting. 2. Press $\#$ and the display shows the new setting.

Dialer Abort Delay (02006)	<i>Phones Options-Global (Default=30 sec.)</i>
<p>This setting determines how much time (15 to 45 seconds) the user has to enter the disarm command in order to prevent the panel from reporting to the central monitoring station.</p> <p>Note For UL Listed systems, the combined time for the Entry Delay (0310) and Dialer Abort Delay must not exceed 60 seconds.</p>	<p>➤ To change the Dial Abort Delay:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DIAL ABORT DELAY nn (current setting)</i>, enter the desired time (15 to 45 seconds). The display flashes the entered setting. 2. Press $\#$ and the display shows the new setting.

Cancel Message (02007)	<i>Phones Options-Global (Default=on)</i>
<p>This setting determines whether or not the panel displays a cancel message after the user disarms the system to clear an alarm condition.</p>	<p>➤ To turn Cancel Message off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>CANCEL MESSAGE OFF/ON (current setting)</i>, press \square (off) or \square (on). The display flashes the entered setting. 2. Press $\#$ and the display shows the new setting.

Pager Delay (02008)	<i>Phones Options-Global (Default=15 sec.)</i>
<p>This setting determines how long a report is delayed to a pager (00-30 seconds) after the panel dials the pager number.</p> <p>Note The Pager Delay time should not be set below 5 seconds unless absolutely necessary.</p>	<p>➤ To set the Pager Delay time:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PAGER DELAY nn (current setting)</i>, enter a two-digit time (00-30). The display flashes the entered setting. 2. Press $\#$ and the display shows the new setting.

Call Wait Cancel (02009)	<i>Phones Options-Global (Default=none)</i>
<p>This feature lets you set up a dialing prefix to disable the call waiting feature before the panel makes its first dialing attempt to any programmed central monitoring station, pager, or downloader phone number. The prefix can be up to eight digits. For prefixes that require dialing * or #, press and hold for two seconds \square (for *) or \square (for #).</p>	<p>➤ To set up Call Wait Cancel:</p> <ol style="list-style-type: none"> 1. With the display showing <i>CALL WAIT CANCEL _ (or current setting)</i>, enter the desired prefix. The display flashes the entered setting. 2. Press $\#$ and the display shows the new setting.
 <p>Caution DO NOT change this option from its default if the customer doesn't have call waiting. Verify with the customer that they have call waiting with their phone service provider before changing this option from its default. Changing this option from its default without call waiting will prohibit the panel from calling the central station.</p>	

The following describes how to program the *PHONE OPTION* settings that appear under *PARTITION 1*.

Remote Access (0210)	<i>Phones Options-Partition 1 (Default=on)</i>
<p>This setting determines whether or not the panel can be accessed from off-site for downloader programming.</p>	<p>➤ To turn Remote Access off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>REMOTE ACCESS OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Ring/Hang/Ring (0211)	<i>Phones Options-Partition 1 (Default=on)</i>
<p>This setting determines how the panel picks up (seizes) the phone line for downloader programming by remote access.</p> <p>Note The Remote Access setting (0210) must be turned on for this feature to work.</p> <p>When this feature is on, the caller must listen for one or two full rings, hang up, then call the premises again within the next 10-40 seconds. The system then answers after the first ring. The “on” setting is recommended if an answering machine shares the phone line with the panel.</p> <p>When Ring/Hang/Ring is turned off, the caller must listen for 12 full rings before the system answers. The “off” setting is recommended if there is no answering machine sharing the phone line with the panel.</p>	<p>➤ To turn Ring/Hang/Ring access off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>RING/HANG/RING OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display begins flashing the entered selection. 2. Press [#] and the display shows the new setting.

Timers Menu

The *TIMERS* menu lets you set up the various system feature times that affect the whole system (global) or a specific partition. The following describes how to program the timer settings that appear under *GLOBAL*.

Supervisory Time (0300)	<i>Timers-Global (Default=random)</i>
<p>This setting determines what time of day the panel sends supervisory, low battery, or auto phone test reports to the central station. The setting is based on a 24-hour timer so there is no need to enter A.M. and P.M. settings. These will appear automatically on the display.</p> <p>Note The panel clock must be set with the correct time for accurate supervisory time reporting. Refer to the user programming section for setting the panel clock.</p>	<p>➤ To set the Supervisory Time:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SUPERVISORY TIME HH:MM (current setting)</i>, enter the desired 4-digit time value (for example, enter 1330 to set the supervisory time for 1:30 p.m.). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

RF Tx Timeout (0301)	<i>Timers-Global (Default=12 hours)</i>
<p>If any supervised wireless device stops sending supervisory transmissions, the panel reports a supervisory condition to the central station. This setting determines how long the panel should wait (2-24 hours) for a supervisory transmission before sending the report.</p> <p>Note For UL 985 & 1635 listed installations, the RF Tx Timeout must be set to 4 hours. For UL 1023 listed installations, the RF Tx Timeout must be set to 24 hours.</p>	<p>➤ To set the RF Tx Timeout:</p> <ol style="list-style-type: none"> 1. With the display showing <i>RF TX TIMEOUT nn HOURS (current setting)</i>, enter the desired 2-digit timeout value (02-24). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Phone Test Freq. (0302)	<i>Timers-Global (Default=7 days)</i>
<p>This setting determines how often the panel sends the automatic phone test (see “Auto Phone Test” under <i>PHONE OPTIONS—GLOBAL</i>) to the central station (or a pager). The phone test frequency can be set to report every 1 to 255 days.</p> <p>Note For UL 1635 listed installations, this feature must be set to 1.</p>	<p>➤ To set the Phone Test Freq:</p> <ol style="list-style-type: none"> 1. With the display showing <i>PHONE TEST FREQ nnn DAYS (current setting)</i>, enter the number of days (1-255). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Next Phone Test (0303)	<i>Timers-Global (Default=7 days)</i>
<p>This setting determines how many days (1-255) until the next automatic phone test occurs. When setting up Phone Test Freq, Next Phone Test must be set to accurately count the number of days left in the cycle before the next phone test occurs. This setting should be the same or less than the Phone Test Freq. setting.</p> <p>Note For UL 1635 listed installations, this feature must be set to 1.</p>	<p>➤ To set the Next Phone Test:</p> <ol style="list-style-type: none"> 1. With the display showing <i>NEXT PHONE TEST nnn DAYS (current setting)</i>, enter the number of days (1-255). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Output Trip Time (0304)	<i>Timers-Global (Default=4 sec.)</i>
<p>This setting determines how long onboard and SnapCard outputs are activated when tripped (if they are configured for a momentary response).</p>	<p>➤ To set the Output Trip Time:</p> <ol style="list-style-type: none"> 1. With the display showing <i>OUTPUT TRIP TIME nn SECONDS (current setting)</i>, enter the number of seconds (1-12). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Activity Timeout (0305)	<i>Timers-Global (Default=24 hours)</i>
<p>This setting determines when the system sends a “no activity” report. The panel can be set to wait from 1-42 hours. If no user interaction or device activation occurs in that time, the panel sends a report to the central station.</p>	<p>➤ To set the Activity Timeout:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ACTIVITY TIMEOUT nn HOURS (current setting)</i> enter the desired 2-digit time value (1-42). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Daylight Savings (0306)	<i>Timers-Global (Default=on)</i>
<p>This setting determines whether or not the panel clock automatically adjusts for daylight saving time changes in spring and fall.</p>	<p>➤ To turn Daylight Savings off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DAYLIGHT SAVINGS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

The following describes how to program the Timer settings that appear under *PARTITION 1*.

Entry Delay (0310)	<i>Timers-Partition 1 (Default=30 sec.)</i>
<p>This setting determines how much time (30-240 seconds) users have to disarm the system (after entering the armed premises through a designated delay door) to avoid causing an alarm.</p> <p>Note For UL Listed residential installations, the Entry Delay must be set to 45 seconds or less. The combined time for the Entry Delay and Dialer Abort Delay (02006) must not exceed 60 seconds.</p>	<p>➤ To set the Entry Delay:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ENTRY DELAY nnn SECONDS (current setting)</i>, enter the desired time value (30-240 using 8-second intervals). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Exit Delay (0311)	<i>Timers-Partition 1 (Default=60 sec.)</i>
<p>This setting determines how much time (45-184 seconds) the user has to leave the premises through a designated delay door (after arming the system) without causing an alarm.</p> <p>Note For UL Listed residential installations, the Exit Delay must be set to 60 seconds or less.</p>	<p>➤ To set the Exit Delay:</p> <ol style="list-style-type: none"> 1. With the display showing <i>EXIT DELAY nnn SECONDS (current setting)</i>, enter the desired time value (45-184 using 8-second intervals). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Extended Delay (0312)	<i>Timers-Partition 1 (Default=4 min.)</i>
<p>This setting determines how much time (1-8 minutes) the user has to enter or exit the premises through a designated extended delay door without causing an alarm.</p> <p>Note For UL Listed systems, Extended Delay shall not be used.</p>	<p>➤ To set the Extended Delay:</p> <ol style="list-style-type: none"> 1. With the display showing <i>EXTENDED DELAY nn MINUTES (current setting)</i>, enter the desired time value (1-8). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Siren Timeout (0313)	<i>Timers-Partition 1 (Default=4 min.)</i>
<p>This setting determines how long sirens sound (1-30 minutes) if no one is present to disarm the system.</p> <p>Note For UL Listed systems, Siren Timeout must be set to 4 minutes or more.</p>	<p>➤ To set the Siren Timeout:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SIREN TIMEOUT nn MINUTES (current setting)</i>, enter the desired time value (1-30). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Touchpad Options Menu

The TOUCHPAD OPTIONS menu lets you set up touchpad panic and arming operation. The following describes how to program the touchpad option settings that appear under PARTITION 1.

Fire Panic (0400)	<i>Touchpad Options-Partition 1 (Default=on)</i>
<p>This setting determines whether touchpad fire panic buttons are enabled (on) or disabled (off).</p>	<p>➤ To change the Fire Panic setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>FIRE PANIC OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Aux. Panic (0401)	<i>Touchpad Options-Partition 1 (Default=on)</i>
<p>This setting determines whether touchpad auxiliary panic buttons are enabled (on) or disabled (off).</p>	<p>➤ To change the Auxiliary Panic setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>AUXILIARY PANIC OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Police Panic (0402)	<i>Touchpad Options-Partition 1 (Default=on)</i>
<p>This setting determines whether touchpad police panic buttons are enabled (on) or disabled (off) on.</p>	<p>➤ To change the Police Panic setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>POLICE PANIC OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Keychain TP Arm (0403)	<i>Touchpad Options-Partition 1 (Default=off)</i>
<p>This setting determines how the keychain touchpad arms the system. When set to ON, pressing the LOCK button arms the system directly to AWAY with no Entry and Exit Delay. When set to OFF, pressing the LOCK button increments the arming level from OFF to STAY and from STAY to AWAY.</p>	<p>➤ To change the Keychain Touchpad Arming setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>KEYCHAIN TOUCHPAD ARM OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Star Is No Delay (0404)	<i>Touchpad Options-Partition 1 (Default=off)</i>
<p>This setting determines whether the keychain touchpad star button controls an onboard or SnapCard output (off) or the No Delay feature (on).</p>	<p>➤ To change the Keychain Star Is No Delay setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>STAR IS NO DELAY OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Reporting Menu

The *REPORTING* menu lets you set up which system events (global or partition) are reported to the central monitoring station. The following describes how to program the reporting settings that appear under *GLOBAL*.

24-Hour Tamper (05000)	<i>Reporting-Global (Default=off)</i>
<p>When this feature is turned on, the panel sounds sirens and reports a tamper alarm when wireless sensor tamper switches are activated (even when the system is disarmed).</p>	<p>➤ To turn 24-Hour Tamper off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>24-HOUR TAMPER OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Buffer Control (05001)	<i>Reporting-Global (Default=off)</i>
When this setting is on, only arming level changes are logged into the buffer (memory) of the panel. When this setting is off, <i>all</i> system events are logged in the buffer.	<p>➤ To turn Buffer Control off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BUFFER CONTROL OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Back In Service (05002)	<i>Reporting-Global (Default=on)</i>
When this feature is turned on, the panel reports to the central station when AC and backup battery power are restored (after an extended power outage).	<p>➤ To turn Back In Service reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BACK IN SERVICE OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Bypass Reports (05003)	<i>Reporting-Global (Default=off)</i>
When this feature is turned on, the panel reports to the central station (or a pager) whenever sensors or zones are bypassed.	<p>➤ To turn Bypass Reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BYPASS REPORTS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Low CPU Battery (05004)	<i>Reporting-Global (Default=on)</i>
When this setting is on, the panel reports a low panel battery to the central station (or pager) before shutting down.	<p>➤ To turn Low CPU Battery reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LOW CPU BATTERY OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.
<p>Note For UL listed systems, Low CPU Battery must be set to "on."</p>	

Battery Restoral (05005)	<i>Reporting-Global (Default=off)</i>
If this setting is on, the panel reports to the central monitoring station (or pager) when the panel battery is restored or replaced or when a wireless sensor reports a battery replacement to the panel.	<p>➤ To turn Battery Restoral reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BATTERY RESTORAL OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Buffer Full Rpt (05006)	<i>Reporting-Global (Default=off)</i>
<p>When this setting is turned on, the panel sends an “event buffer full” report to the central monitoring station when the panel event buffer (memory) is nearly full.</p>	<p>➤ To turn Buffer Full Report off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BUFFER FULL RPT OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Zone Restorals (05007)	<i>Reporting-Global (Default=off)</i>
<p>When this setting is on, the panel reports a restoral to the central monitoring station (or pager) when wireless or hardwire zones in alarm are reset or “restored” before the alarm is canceled.</p> <p>Note As with all GE Interlogix panels, hardwire smoke detectors connected to Concord or SnapCard hardwire zones do not send restorals.</p>	<p>➤ To turn Zone Restoral reporting off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ZONE RESTORALS OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Two Trip Error (05008)	<i>Reporting-Global (Default=off)</i>
<p>This setting works with the “Alarm Verify” feature. If Alarm Verify is turned on, then the panel waits for a second sensor trip before sending an alarm (see “Appendix A: Table A3. Sensor Group Characteristics”).</p> <p>If Two Trip Error is also on and a second sensor trip <i>does not occur</i> within a 4-minute time period, then the panel sends an error report to the central monitoring station.</p> <p>When this feature is turned off, the panel does not send “Two Trip Error” reports.</p> <p>Note For UL Listed systems, Two Trip Error must be turned off.</p>	<p>➤ To turn Two Trip Error off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>TWO TRIP ERROR OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

TP Panic RPT FMT (05009)	<i>Reporting-Global (Default=off)</i>
<p>This setting determines how the panel formats touchpad panic alarms reports to the central station.</p> <p>When this feature is on, touchpad panic alarms report using the following 3-digit codes: Auxiliary—597, Police—598, Fire—599</p> <p>When turned off, touchpad panic alarms report using a 3-digit code from 500 to 503 with the last digit identifying the touchpad device number.</p>	<p>➤ To turn TP Panic RPT FMT off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>TP PANIC RPT FMT OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

AC Failure (05010)	<i>Reporting-Global (Default=off)</i>
<p>When this setting is on, the panel reports to the central station if AC power to the panel is out for 15 continuous minutes.</p> <p>Note For UL Listed systems, AC Failure must be turned on.</p>	<p>➤ To turn AC Failure reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>AC FAILURE OFF/ON (current setting)</i>, press [1] (off) or [2] (on). The display flashes the entered setting. 2. Press [#] and the display shows the new setting.

Receiver Failure (05011)	<i>Reporting-Global (Default=off)</i>
<p>When this setting is on, the panel reports a receiver failure if either no wireless sensor signals have been received for two hours or if signals are being received constantly (jamming the receiver).</p> <p>Note For UL Listed installations that include wireless devices, this feature must be on.</p>	<p>➤ To turn Receiver Failure reports off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>RECEIVER FAILURE OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

RF Low Bat Rpt (05012)	<i>Reporting-Global (Default=weekly)</i>
<p>This setting determines whether the panel reports to the central monitoring station (or pager) daily or weekly when a wireless device reports a low battery condition to the panel.</p>	<p>➤ To set RF Low Battery Report to daily or weekly:</p> <ol style="list-style-type: none"> 1. With the display showing <i>RF LOW BAT RPT DAILY/WEEKLY (current setting)</i>, press 1 (daily) or 2 (weekly). The display flashes the entered setting. 2. Press # and the display shows the new setting.

RF Supv Report (05013)	<i>Reporting-Global (Default=weekly)</i>
<p>This setting determines whether the panel reports to the central monitoring station (or pager) daily or weekly when the panel detects a wireless device supervisory condition.</p>	<p>➤ To set RF Supv Report to daily or weekly:</p> <ol style="list-style-type: none"> 1. With the display showing <i>RF SUPV REPORT DAILY/WEEKLY (current setting)</i>, press 1 (daily) or 2 (weekly). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Swinger Limit (05014)	<i>Reporting-Global (Default=1)</i>
<p>This setting determines the maximum number of times a sensor or zone can go into alarm (during a single arming period) before the panel automatically bypasses that sensor or zone. This feature only applies to sensors in groups 00-20, 29, or 34.</p> <p>When set to 1, the panel automatically bypasses a sensor or zone after it causes an alarm. When set to 2, the panel waits until a sensor or zone has caused a second alarm (during the same arming period) before bypassing it. At either setting, the automatic bypass is logged into the event buffer.</p> <p>A bypassed zone or sensor will be cleared (automatically “unbypassed”) if the system receives no further activations from that sensor or zone over the next 48-50 hours.</p> <p>Changing the arming level also clears all automatically bypassed sensors and zones and resets the Swinger Limit count on all sensors and zones.</p>	<p>➤ To set the Swinger Limit:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SWINGER LIMIT n (current setting)</i>, press 1 or 2. The display flashes the entered setting. 2. Press # and the display shows the new setting.

The following describes how to program the settings that appear under *REPORTING—PARTITION 1*.

Opening Reports (0510)

Reporting-Partition 1 (Default=off)

This setting determines whether or not the panel sends an opening report to the central station (or pager) after disarming the system.

Note

To use this feature, the Open/Close Reports settings under the PHONES—CS PHONE 1-2 and/or PHONES—PAGER PHONE 1-3 menus must be turned on for the specific CS Phone or Pager Phone number.

➤ To turn Opening Reports off or on:

1. With the display showing *OPENING REPORTS OFF/ON (current setting)*, press **[1]** (off) or **[2]** (on). The display flashes the entered setting.
2. Press **[#]** and the display shows the new setting.

Closing Reports (0511)

Reporting-Partition 1 (Default=off)

This setting determines whether or not the panel sends a closing report to the central station (or pager) after arming the system.

Note

To use this feature, the Open/Close Reports settings under the PHONES—CS PHONE 1-2 and/or PHONES—PAGER PHONE 1-3 menus must be turned on for the specific CS Phone or Pager Phone number.

➤ To turn Closing Reports off or on:

1. With the display showing *CLOSING REPORTS OFF/ON (current setting)*, press **[1]** (off) or **[2]** (on). The display flashes the entered setting.
2. Press **[#]** and the display shows the new setting.

Recent Closings (0512)

Reporting-Partition 1 (Default=on)

This setting determines whether or not the panel sends a recent closing report to the central station (or a pager) if an alarm occurs within two minutes *after* the exit delay time expires. Such a report is used to identify a possible exit fault.

➤ To turn Recent Closings off or on:

1. With the display showing *RECENT CLOSINGS OFF/ON (current setting)*, press **[1]** (off) or **[2]** (on). The display flashes the entered setting.
2. Press **[#]** and the display shows the new setting.

No Activity (0513)

Reporting-Partition 1 (Default=off)

This setting determines whether or not the panel sends a no activity report to the central station (or pager) if there is no system activity within a preset time period (see “” on page 30).

➤ To turn No Activity reports off or on:

1. With the display showing *NO ACTIVITY OFF/ON (current setting)*, press **[1]** (off) or **[2]** (on). The display flashes the entered setting.
2. Press **[#]** and the display shows the new setting.

Duress Option (0514)

Reporting-Partition 1 (Default=off)

This setting determines whether or not the system can be controlled using a programmed duress code (see “” on page 23).



Caution

Because using duress codes often results in false alarms due to code entry errors, it is strongly recommended not to program any duress codes.

If a duress code is absolutely necessary, their use with an Interrogator is highly recommended to reduce false alarms and accidental dispatches.

➤ To turn Duress Option off or on:

1. With the display showing *DURESS OFF/ON (current setting)*, press **[1]** (off) or **[2]** (on). The display flashes the entered setting.
2. Press **[#]** and display shows the new setting.

Force Armed (0515)	<i>Reporting-Partition 1 (Default=off)</i>
<p>This setting determines whether or not the panel reports to the central monitoring station when a user force arms the system.</p> <p>Force Armed occurs if the user presses BYPASS when arming the system with open sensors/zones protesting.</p> <p>Note Auto Force Armed always reports to the central monitoring station. Auto Force Armed occurs if the user does not press BYPASS when arming the system with open sensors/zones protesting and the siren time expires.</p> <p>For UL Listed systems, Force Armed must be turned off.</p>	<p>➤ To turn Force Armed off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>FORCE ARMED OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Alarm Verify (0516)	<i>Reporting-Partition 1 (Default=off)</i>
<p>This setting determines whether the panel reports to the central monitoring station after a single sensor/zone trip (off) or waits for a second trip before reporting (on). The second trip must be a different sensor and occur within 4 minutes of the first trip.</p> <p>This setting affects sensors/zones learned into groups 10 through 20. If Alarm Verify is set to on, group 18 responds the same as group 17. See “Appendix A, Table A.3: Sensor Group Characteristics.”</p> <p>Note For UL Listed systems, Alarm Verify must be turned off.</p>	<p>➤ To turn Alarm Verify off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ALARM VERIFY OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

System Tamper (0517)	<i>Reporting-Partition 1 (Default=off)</i>
<p>This setting determines the following:</p> <ul style="list-style-type: none"> • Whether or not the armed system goes into alarm if several incorrect access codes (40 consecutive keystrokes) are entered. • Whether or not the panel reports to the central station if a bus device stops communicating with the panel. • Whether or not the panel reports to the central station if an RF sensor (non fire) is tampered with. Tamper on fire sensors will always be reported to the central station. <p>Note For UL Listed systems, System Tamper must be turned on.</p>	<p>➤ To change the System Tamper setting:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SYSTEM TAMPER OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Siren Options Menu

The *SIREN OPTIONS* menu lets you set up siren operation and supervision. The following describes how to program the siren option settings that appear under *GLOBAL*.

Immediate Trouble Beeps (0600)	<i>Siren Options-Global (Default=off)</i>
<p>This setting determines whether the panel activates trouble beeps immediately (on) once a wireless device supervisory condition is detected, or only if the condition exists at panel supervisory time (off). Refer to <i>TIMERS—GLOBAL—SUPERVISORY TIME</i>.</p> <p>Note For UL Listed systems, this feature must be on.</p>	<p>➤ To turn Immediate Trouble Beeps off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>IMMEDIATE BEEPS OFF/ON (current setting)</i>, press 1 (off) or 2 (on). The display flashes the entered setting. 2. Press # and the display shows the new setting.

Disable Trouble Beeps (0601)	<i>Siren Options-Global (Default=off)</i>
<p>This setting determines whether or not the panel activates trouble beeps when a wireless device supervisory condition is detected.</p> <p>Note For UL Listed systems, this feature must be off.</p>	<p>➤ To turn Disable Trouble Beeps off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>DISABLE TR BEEPS OFF/ON (current setting)</i>, press <input type="button" value="1"/> (off) or <input type="button" value="2"/> (on). The display flashes the entered setting. 2. Press <input type="button" value="#"/> and the display shows the new setting.

UL 98 Options (0602)	<i>Siren Options-Global (Default=off)</i>
<p>This setting determines whether or not the panel complies with UL 98 requirements (4-hour trouble beep restart, 4-hour backup battery test, 2-hour supervisory time period for sensor group 26—Fire).</p> <p>Note For UL Listed systems, this feature must be on.</p>	<p>➤ To turn UL 98 Options off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>UL 98 OPTIONS OFF/ON (current setting)</i>, press <input type="button" value="1"/> (off) or <input type="button" value="2"/> (on). The display flashes the entered setting. 2. Press <input type="button" value="#"/> and the display shows the new setting.

The following describes how to program the settings that appear under *SIREN OPTIONS—PARTITION 1*.

Siren Verify (0610)	<i>Siren Options-Partition 1 (Default=off)</i>
<p>This setting determines whether or not the panel monitors sirens connected to panel terminal 7 (OUT1/+12V).</p> <p>When this feature is on, sirens connected to panel terminals 3 (GND) and 7 (OUT1/+12V) require a 2k end-of-line resistor. Refer to “Installing the System—Connecting Sirens” for complete details.</p> <p>Note For UL Listed systems, this feature must be on.</p>	<p>➤ To turn Siren Verify off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SIREN VERIFY OFF/ON (current setting)</i>, press <input type="button" value="1"/> (off) or <input type="button" value="2"/> (on). The display flashes the entered setting. 2. Press <input type="button" value="#"/> and the display shows the new setting.

Sensors Menu

The *SENSORS* menu gives you access to the following:

- *LEARN SENSORS*—lets you learn hardwire zones and wireless sensors into panel memory and assign zones/sensors to specific partitions.
- *SENSOR TEXT*—lets you program sensor text for zone/sensor identification.
- *DELETE SENSORS*—lets you delete zones/sensors from panel memory.
- *EDIT SENSORS*—lets you view and/or change sensor/zone group assignment, view sensor number and text assignments of learned sensors/zones, identify whether zone is wireless or hardwire, and indicates sensor/zone/touchpad input N/C or N/O configuration.

The following describes how to program the sensor settings that appear under *LEARN SENSORS*.

Note

If 2-wire smoke detectors are connected to hardwire zone input 6, the Two-wire Smoke setting must be turned on **before** entering the *LEARN SENSORS* menu. See *ONBOARD OPTIONS—INPUTS*.

The following describes how to learn hardwire zones and wireless devices into panel memory.

The panel comes with six factory programmed onboard hardwire zones. The factory programmed settings are listed below:

- Zone 1: 10-Entry/Exit
- Zone 2: 17-Instant Interior Follower
- Zone 3: 13-Instant Perimeter
- Zone 4: 13-Instant Perimeter
- Zone 5: 13-Instant Perimeter
- Zone 6: 13-Instant Perimeter

Note

Clearing panel memory also clears all factory programmed zones.

Install an end-of-line resistor on all unused, factory programmed, onboard panel zones
OR

Delete the unused zone from panel memory (see "Accessory Modules Menu" on page 40).

➤ **To Learn Sensors into panel memory:**

1. With the display showing *SENSORS*, press **[F]** and the display shows *LEARN SENSORS*.
2. Press **[F]** and the display shows *SENSOR GROUP 0*.
3. Enter the desired 2-digit sensor group + **[F]** (see Appendix A for a description of all sensor group characteristics). The display shows *TRIP SENSOR nn*, where nn is the displayed (next available) sensor number.
4. To change the displayed sensor number, enter the desired 2-digit sensor number + **[F]**.
5. With the desired sensor number displayed, trip the sensor or zone as follows:
 - **Hardwire Zones**—trip the zone into the alarm state.
 - **Wireless Sensors**—follow the instructions included with each sensor.
 - **Wireless Door/Window Sensors with External Contacts**—place the external contact in the alarm condition, then activate the sensor tamper switch.
 - **Handheld Wireless Touchpads**—press and hold the **BYPASS** button until the touchpad LED flashes.
 - **Keychain Touchpads**—press and hold the **LOCK** and **UNLOCK** buttons together until the touchpad LED flashes.
 - **ELM Keychain Touchpads**—a.) Press and release the **UNLOCK** button twice quickly, then press and hold until the LED flashes three times. b.) Press and release the **UNLOCK** button once quickly, then press and hold until the LED flashes two times. c.) Press and hold the **UNLOCK** button until the LED flashes once.
6. Continue tripping sensors to learn them into the selected sensor group. To stop learning sensors into a group, press **[*]** twice and start again from step 1 (*LEARN SENSORS*) to learn sensors into another group (or use the *EDIT SENSORS* menu to change group assignment after learning the sensor/zone).

Use the following guidelines for programming text to identify zone/sensor locations.

- There are 16 character/word locations or "Item Numbers" for each zone/sensor name. Item numbers for each character/word appear in "Appendix A, Table A4."
- If a desired word does not appear in the list, create it using characters (custom text).
- When using words, spaces between them appear automatically. When creating words using characters, you must reserve an item number for a "space" after creating the word.
- Each character or word uses up one item number. For example, a word from the list counts as one item number. A created word, such as **BOY'S** counts as six item numbers, 4 letters, 1 apostrophe, and 1 space.
- Plan ahead before programming sensor text. You may need to abbreviate words you create to avoid running out of item numbers.

➤ **To program Sensor Text:**

1. With the display showing *LEARN SENSORS*, press **[E]** until the display shows *SENSOR TEXT*.
2. Press **[F]** and the display shows *TEXT FOR SN 01*.
3. Press **[F]** and the display shows *SN 01 ITEM 00 000 -*. Where *ITEM 00* is the first character/word location and *000* is the 3-digit character/word number.
4. Enter the 3-digit number of the desired character/word or scroll through the numbers by pressing **[E]** (forward) or by pressing **[A]** (backward). If you make a mistake, simply enter the correct 3-digit number or continue scrolling through choices.
5. Press **[F]** to accept the displayed choice and the display shows *SN 01 ITEM 01 000 -*.
6. Repeat steps 4 and 5 as needed to complete the zone/sensor name.
7. Press **[*]** after entering the last 3-digit character/word number. The display shows the complete text name. For example, *TEXT FOR SN 01 FRONT ENTRY DOOR*.

Delete Sensors (072)	<i>Sensors (Default=none)</i>
<p>The following describes how to remove hardware zone and wireless sensor numbers from panel memory.</p> <p>Note Deleting sensors does not delete sensor text associated with the deleted sensor number. To delete sensor text, enter the SENSOR TEXT menu and enter 000 (nulls) for each item number.</p>	<p>➤ To Delete Sensors from panel memory:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LEARN SENSORS</i>, press [F] until the display shows <i>DELETE SENSORS</i>. 2. Press [#] and the display shows <i>DELETE SENSOR nn</i> (lowest zone/sensor number in panel memory). 3. Press [#] to delete the displayed sensor or enter the desired sensor number, then press [#]. The display flashes the entered number, then stops and shows <i>DELETE SENSOR NN DONE</i>. 4. Repeat steps 2 and 3 until all desired sensors are deleted.

Edit Sensors (073)	<i>Sensors (Default=none)</i>
<p>This menu lets you view the assignments for each learned zone/sensor. For example, the display shows: <i>S01 P1 G13 NC HW BACK DOOR</i>.</p> <p>where S01 = zone/sensor number, P1 = partition 1, G13 = sensor group 13, NC = normally closed, HW = hardwired, and BACK DOOR is the programmed text name.</p> <p>You can also change the zone/sensor group assignment to eliminate the need to delete and relearn the zone/sensor.</p>	<p>➤ To Edit Sensors:</p> <ol style="list-style-type: none"> 1. With the display showing <i>LEARN SENSORS</i>, press [F] until the display shows <i>EDIT SENSORS</i>. 2. Press [#] and the display shows the lowest sensor number zone/sensor assignments. 3. Press [A] or [B] to scroll through all learned zone/sensor number assignments. 4. When the desired zone/sensor is displayed press [#]. The display shows <i>SENSOR GROUP nn</i> (current group assignment). 5. Enter the desired group number, then press [#]. The display shows the new group assignment.

Accessory Modules Menu

The *ACCESSORY MODULES* menu gives you access to the following:

- *BUS DEVICES*—this menu lets you read bus device unit numbers, assign bus devices to a partition, and set other features associated with a specific bus device.
- *SNAPCARD*—this menu lets you set the configuration number for each SnapCard output.

The following describes how to program the settings that appear under *ACCESSORY MODULES—BUS DEVICES*.

Note
Most settings under *ACCESSORY MODULES—BUS DEVICES* have no shortcut numbers.

Unit-ID (0800 thru 0803)	<i>Acc. Modules-Bus Devices (Default=none)</i>
<p>This menu lets you identify all connected bus devices, each device address, unit ID number, and other configurations based on a specific device. You can also delete learned bus device addresses.</p> <p>Note To help identify bus devices, the 8-digit unit ID number is also located on a label on each SuperBus 2000 device.</p>	<p>➤ To identify bus device Unit and ID:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BUS DEVICES</i>, press [#]. The display shows the bus device unit number and the 8-digit unit ID number. For example, <i>UNIT - ID 0—02110185</i>. Where 0 is the bus device unit number and 02110185 is the unit ID number. 2. Press [A] or [B] to identify all other bus device unit numbers (0-3) and identification numbers. <p>➤ To delete learned bus device unit numbers:</p> <ol style="list-style-type: none"> 1. With the display showing <i>BUS DEVICES</i>, press [#]. The display shows the bus device set to unit number 0. 2. Press [A] or [B] until the bus device unit number you want to delete is displayed. 3. Press [D]. The display changes the unit number to <i>NONE</i>.

Device ID	<i>Acc. Modules-Bus Devices (Default=none)</i>
<p>This menu lets you change a bus device ID number when replacing a defective bus device.</p>	<p>➤ To change a Device ID:</p> <ol style="list-style-type: none"> 1. With the display showing the desired device, press [F] twice. The display shows <i>DEVICE ID (current ID)</i>. 2. Enter the ID of the new bus device. The display flashes the entered selection. Press [F] and the display shows the new setting. 3. Exit programming mode. 4. Remove AC and battery power from the panel. 5. Replace the defective bus device with the new one. 6. Apply AC and battery power to the panel.

Status Beeps	<i>Acc. Modules-Bus Devices (Default=on)</i>
<p>This setting determines whether or not the selected touchpad sounds status beeps. Each touchpad can be set individually. This feature is usually turned off if a touchpad is located in or near bedrooms to avoid disturbing persons sleeping.</p> <p>Note For UL Listed systems, Status Beeps must be turned on.</p>	<p>➤ To turn touchpad Status Beeps on or off:</p> <ol style="list-style-type: none"> 1. With the display showing the desired touchpad, press [F] then [B] once. The display shows <i>TOUCHPAD OPTIONS</i>. 2. Press [F] and the display shows <i>STATUS BEEPS OFF/ON (current setting)</i>. 3. Press [1] (off) or [2] (on) to select the desired setting. The display flashes the entered selection. Press [F] and the display shows the new setting.

Key Beeps	<i>Acc. Modules-Bus Devices (Default=on)</i>
<p>This setting determines whether or not selected touchpads sound beeps when their buttons are pressed. This feature is usually turned off if a touchpad is located in or near bedrooms to avoid disturbing persons sleeping.</p>	<p>➤ To turn Key Beeps on or off:</p> <ol style="list-style-type: none"> 1. With the display showing the desired touchpad, press [F] + [B] + [F] + [B]. The display shows <i>KEY BEEPS OFF/ON (current setting)</i>. 2. Press [1] (off) or [2] (on) to select the desired setting. The display flashes the entered selection. Press [F] and the display shows the new setting.

The following describes how to program the settings that appear under *SNAPCARDS*.

Output 1, 2, 3, 4 (081000-output 1) (081010-output 2) (081020-output 3) (081030-output 4)	<i>Acc. Modules-SnapCards (Defaults: Output 1=01400, Output 2=00410, Output 3=00903, Output 4=01003)</i>
<p>This setting lets you assign the 5-digit configuration number for each SnapCard relay output that determines which system event activates the output and the duration or time the output is activated.</p> <p>The first three digits represent the trigger number of an event such as an alarm, open sensor, or arming the system.</p> <p>The last two digits represent how the output responds such as momentary, sustained (or latched), or for a preset time.</p> <p>Tables A6-A10 in “Appendix A” identify system event trigger and response numbers.</p>	<p>➤ To assign configuration numbers to SnapCard Relay outputs:</p> <ol style="list-style-type: none"> 1. With the display showing <i>SNAPCARDS</i>, press [F]. The display shows <i>OUTPUT PROGRAMMING</i>. 2. Press [F] again and the display shows <i>OUTPUT 1</i>. 3. Press [A] or [B] to select the desired output (1-4), then press [F]. The display shows <i>OUTPUT n (current setting)</i>. 4. Enter the desired 5-digit configuration number for this output. The display flashes the entered number. Press [F] and the display shows the new setting.

Onboard Options Menu

The *ONBOARD OPTIONS* menu lets you set up the following built-in options:

INPUTS—this menu lets you set panel zone input 6 for 2-wire smoke operation and turn the smoke verification feature off/on.

OUTPUTS—this menu lets you assign the two built-in panel outputs to partitions and set their configuration numbers.

The following describes how to program the settings that appear under **ONBOARD OPTIONS—INPUTS**.

Smoke Verify (0900)	<i>Onboard Options-Inputs (Default=off)</i>
<p>This setting controls the number of sensor group 26 (fire) zone trips needed to report a fire alarm.</p> <ul style="list-style-type: none"> • Hardwire Smokes: will determine whether or not the panel requires two alarm signals within five minutes (on) from 2-wire smoke detectors connected to panel zone input 6 and/or SnapCard zone inputs or any other hardwire zone learned into group 26 (fire) before activating system sirens and reporting to a central station (or pager). • Wireless Smokes: the first trip of a group 26 RF sensor will cause a local fire alarm. The second trip of any group 26 zone within the siren timeout will cause that fire alarm to be reported to the central station. <p>Note RF smoke detectors repeat the alarm transmission every 60 seconds as long as they are detecting smoke. This repeated transmission will serve as the second zone trip, causing the alarm to be reported.</p>	<p>➤ To turn Smoke Verify off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ONBOARD OPTIONS</i>, press ⏏ twice. The display shows <i>SMOKE VERIFY OFF/ON (current setting)</i>. 2. Press 1 (off) or 2 (on). The display flashes the entered number. Press ⏏ and the display shows the new setting. <p>Note For California State Fire Marshall Listed installations, this feature must be off.</p>

Two-Wire Smoke (0901)	<i>Onboard Options-Inputs (Default=off)</i>
<p>This setting determines whether panel zone input 6 is set up for 2-wire smoke detectors (on) or for standard intrusion or 4-wire smoke detectors (off).</p> <p>Note If 2-wire smoke detectors are connected to hardwire zone input 6, this setting must be turned on before entering the <i>LEARN SENSORS</i> menu.</p>	<p>➤ To turn Two-Wire Smoke off or on:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ONBOARD OPTIONS</i>, press ⏏ twice, then 6 once. The display shows <i>TWO WIRE SMOKE OFF/ON (current setting)</i>. 2. Press 1 (off) or 2 (on). The display flashes the entered number. Press ⏏ and the display shows the new setting.

Output 1, 2 (09100-output 1) (09110-output 2)	<i>Onboard Options-Inputs (Defaults: Output 1=00410, Output 2=01710)</i>
<p>This setting lets you assign the selected output a 5-digit configuration number that determines which system event activates the output and the duration or time the output is activated.</p> <p>The first three digits represent the trigger number of an event, such as an alarm, open sensor, or arming the system.</p> <p>The last two digits represent how the output responds, such as momentary, sustained (or latched), or for a preset time.</p> <p>Tables A6-A10 in “Appendix A” identify system event trigger and response numbers.</p>	<p>➤ To set up onboard Output 1 & 2 partition and configuration assignments:</p> <ol style="list-style-type: none"> 1. With the display showing <i>ONBOARD OPTIONS</i>, press ⏏ + 6. The display shows <i>OUTPUT PROGRAMMING</i>. 2. Press ⏏ and the display shows <i>OUTPUT 1</i>. Press 6 to select <i>OUTPUT 2</i>. 3. After selecting the desired output, press ⏏. The display shows <i>CONFIGURATION (current setting)</i>. 4. Enter the desired configuration number. The display flashes the entered number. Press ⏏ and the display shows the new setting.

Exiting Programming Mode

After installer/dealer programming is completed, use the following procedure to exit programming mode.

- **To exit programming mode:**
1. Press **⏏** until the display shows *SYSTEM PROGRAMMING*.
 2. Press **A** once and the display shows *EXIT PROGRAMMING*.

3. Press **#**. The panel exits program mode and the touchpad displays *TIME AND DATE*.

Entering User Programming Mode

The user programming mode lets you program or view the following system settings:

- Time and Date
- User Codes
- Options
- View System Version Information

You can enter user programming from an alphanumeric or fixed display touchpad, using the system master code.

The system master code default is **1234**.

➤ **To enter user-programming mode:**

- ◆ Press **9** + **000E**. The display shows *TIME AND DATE*. Press

Time and Date Menu

The *TIME AND DATE* menu lets you set the panel clock and calendar. Alphanumeric touchpads display the time and date whenever the system is disarmed. Setting the time and date is important for accurate tracking of system events stored in the event buffer. The panel uses a global clock and calendar for time and date.

The following describes how to set the panel time and date.

Time (00)	<i>Time and Date (Default=00:00)</i>
This setting lets you adjust the panel clock to the correct time. The panel uses a 24-hour clock, eliminating the need to designate A.M. or P.M. For example, to set the time to 4:17 P.M., enter 1617.	<p>➤ To set the Time:</p> <ol style="list-style-type: none">1. With the display showing <i>TIME AND DATE</i>, press # and the display shows <i>TIME hh:mm AM/PM (current time)</i>.2. Enter the correct time (0000 - 2359). The display flashes the entered time. Press # and the display shows the new time.

Date (01)	<i>Time and Date (Default=01/01/00)</i>
This setting lets you adjust the panel calendar to the correct month, day, and year.	<p>➤ To set the Date:</p> <ol style="list-style-type: none">1. With the display showing <i>TIME AND DATE</i>, press # then 8 and the display shows <i>DATE nn/nn/nn (current date)</i>.2. Enter the correct month (01 - 12), day (01 - 31), and year (00 - 99). For example, enter 090100 for September 1, 2000. The display flashes the entered date. Press # and the display shows the new date.

User Codes Menu

Important !

Each security access code (Installer, Dealer, System Master, or User) must be unique. Do not use the same combination of numbers for any two codes.

The *USER CODES* menu lets you program/change regular user access codes and the system master code.

User Codes (10nn0--nn=user 00 thru 15)

User Codes (Default=none)

User Codes perform basic arming and disarming functions. The system allows up to 16 user codes (user numbers 00-15). User numbers that show **** indicate no code is currently programmed for that user number.

➤ **To program Regular User Codes:**

1. With the display showing *USER CODES*, press **#** and the display shows *REGULAR USER CODES*.
2. Press **#** and the display shows *USER nn (first available user number)*.
3. Press **A** or **B** to select the desired user number, then press **#**. The display shows *USER nn - nnnn*.
4. Enter a 4-digit user code and the display flashes *USER nn - nnnn (new code)*. Press **#** to accept the new setting.

➤ **To delete Regular User Codes:**

1. With the display showing *USER CODES*, press **#** and the display shows *REGULAR USER CODES*.
2. Press **#** and the display shows *USER nn (first available user number)*.
3. Press **A** or **B** to select the desired user number/user code you want to delete, then press **#**. The display shows *USER nn - nnnn*.
4. Enter a 4-digit code that is the same as the system master code. With the display flashing the entered code, press **#** and the display shows *USER nn - **** (no code)*.

Direct Bypassing (10nn1--nn=user 00 thru 15)

User Codes (Default=off)

User Codes perform basic arming and disarming functions. The system allows up to 16 user codes (user numbers 00-15). User numbers that show **** indicate no code is currently programmed for that user number.

➤ **To turn user code Direct Bypassing off or on:**

1. With the display showing *USER CODES*, press **#** and the display shows *REGULAR USER CODES*.
2. Press **#** and the display shows *USER nn (first available user number)*.
3. Press **A** or **B** to select the desired user number, then press **#**. The display shows *USER nn - nnnn*.
4. Press **B** and the display shows *DIRECT BYPASSING OFF/ON (current setting)*.
5. Press **1** (off) or **2** (on) and the display flashes the entered setting. Press **#** to accept the new setting.

System Tests (10nn2--nn=user 00 thru 15)

User Codes (Default=off)

This setting determines whether or not a user code can perform phone and sensor tests.

➤ **To turn user code System Tests off or on:**

1. With the display showing *USER CODES*, press **#** and the display shows *REGULAR USER CODES*.
2. Press **#** and the display shows *USER nn (first available user number)*.
3. Press **A** or **B** to select the desired user number, then press **#**. The display shows *USER nn - nnnn*.
4. Press **B** until the display shows *SYSTEM TESTS OFF/ON (current setting)*.
5. Press **1** (off) or **2** (on) and the display flashes the entered setting. Press **#** to accept the new setting.

System Master Code (110)	<i>User Codes (Default=1234)</i>
<p>The System Master Code performs all system operations and user programming.</p>	<p>➤ To change the System Master Code:</p> <ol style="list-style-type: none"> 1. With the display showing <i>USER CODES</i>, press # then B. The display shows <i>SYSTEM MASTER CODE</i>. 2. Press # and the display shows <i>SYSTEM MASTER nnnn (current code)</i>. 3. Enter a new 4-digit code. The display flashes the entered code. Press # and the display shows the new code.

Options Menu

The *OPTIONS* menu lets you set up the system for downloading and silent arming, and lets you adjust alphanumeric touchpad display brightness.

Downloading (20)	<i>Options (Default=on)</i>
<p>This setting determines whether or not the panel can communicate with ToolBox software for programming the system from off-site.</p> <p>Note The panel must have a Downloader phone number and Downloader code programmed and be connected to a phone line for this feature to work.</p>	<p>➤ To turn Downloading off or on:</p> <ol style="list-style-type: none"> 1. Enter user programming with the system master code. The display shows <i>TIME AND DATE</i>. 2. Press A or B until the display shows <i>OPTIONS</i>. 3. Press # and the display shows <i>DOWNLOADING OFF/ON (current setting)</i>. 4. Press 1 (off) or 2 (on). The display flashes the entered selection. Press # and the display shows the new setting.

Silent Arming (21)	<i>Options (Default=off)</i>
<p>This setting determines whether the partition arms the system with (off) or without (on) sounding status beeps from sirens and the touchpad.</p> <p>Note Turning this feature on will double the exit time. This option is not available when <i>SIA False Alarm Reduction (0003)</i> is on.</p>	<p>➤ To turn Silent Arming off or on:</p> <ol style="list-style-type: none"> 1. Enter user programming mode with the system master code. The display shows <i>TIME AND DATE</i>. 2. Press A or B until the display shows <i>OPTIONS</i>. 3. Press #, then B and the display shows <i>SILENT ARMING OFF/ON (current setting)</i>. 4. Press 1 (off) or 2 (on). The display flashes the entered selection. Press # and the display shows the new setting.

Touchpad Brightness (22)	<i>Options (Default=2)</i>
<p>This setting lightens or darkens the background on touchpad displays. Each touchpad display can be set independently to compensate for lighting conditions in the touchpad location.</p>	<p>➤ To adjust Touchpad Brightness:</p> <ol style="list-style-type: none"> 1. Enter user programming mode with the system master code. The display shows <i>TIME AND DATE</i>. 2. Press A or B until the display shows <i>OPTIONS</i>. 3. Press #, then B twice and the display shows <i>TOUCHPAD BRIGHTNESS n (current setting)</i>. 4. Enter a setting from 0 (darkest background) to 3 (brightest background). The display flashes the entered selection. Press # and the display shows the new setting.

Chime On Close (25)

Options (Default=off)

This setting determines whether or not a single chime is sounded when a perimeter door or window is closed.

➤ **To turn Chime On Close off or on:**

1. Enter user programming mode with the system master code. The display shows *TIME AND DATE*.
2. Press **A** or **B** until the display shows *OPTIONS*, then press **#**. The display shows *DOWNLOADING OFF/ON*.
3. Press **A** or **B** until the display shows *CHIME ON CLOSE OFF/ON* (current setting).
4. Press **1** (off) or **2** (on). The display flashes the entered selection. Press **#** and the display shows the new setting.

System Version Menu

The *SYSTEM VERSION* menu lets you view and identify panel hardware and software. This information is primarily used for troubleshooting purposes.

System Version (30=factory code, 31=system number, 32=system level)

(Default=N/A)

This menu lets you view and identify the panel hardware and software version.

➤ **To view and identify the System Version:**

1. Enter user programming with the system master code. The display shows *USER CODES*.
2. Press **A** or **B** until the display shows *SYSTEM VERSION*.
3. Press **#** and the display shows *FACTORY CODE mnn*nnnn*.
4. Press **B** and the display shows *SYSTEM NUMBER *nnnnnnnn*.
5. Press **B** again and the display shows *SYSTEM LEVEL nnnn*.

Downloader Programming

The panel can be programmed remotely using ToolBox. Use the information you recorded in Appendix A to inform the downloading operator of your installation programming requirements.

ToolBox Downloader Programming

➤ **To initiate a ToolBox download session:**

1. Contact your download station and ask the operator to prepare to download to the panel.
2. Make sure the system is disarmed.
3. Press **B** + system master **0000E** + **7** + **0** (any), **1** (down), or **2** (up). The display shows *SYSTEM DOWNLOAD IN PROGRESS* during the downloading process.

If the alphanumeric touchpad does not display *SYSTEM DOWNLOAD IN PROGRESS*, call the downloader operator to verify the downloader phone number and that ToolBox is set up properly. Refer to the “Troubleshooting” section if the problem persists.

Note

A Downloader Phone Number must be programmed and the user-programmable option *Downloading* must be set to on in order for remote downloader programming to work.

Testing the System

This section describes the following subjects:

- Basic System Commands
- Testing Zones/Sensors
- Testing Phone Communication
- Testing Central Station/Pager Communication

You should test the system after installing or servicing and after adding or removing devices from the system. UL Listed systems should be tested weekly.

Refer to the “Troubleshooting” section if correct test results are not achieved.

Basic System Commands

Table 4 describes the basic system touchpad operating commands. For complete details on system operation, including user programming, refer to the system users guide.

Table 4: Basic System Commands

Command	System Response
Ⓚ (STATUS)	Indicates current system status
1 + ⓀⓀⓀⓀ	Disarms system to OFF
2 + ⓀⓀⓀⓀ	Arms system to STAY
3 + ⓀⓀⓀⓀ	Arms system to AWAY
2 (quick arm on)	Arms system to STAY
3 (quick arm on)	Arms system to AWAY
2 or 3 + ⓀⓀⓀⓀ + 4 or 2 or 3 + 4	Makes entry/exit doors instant (4 must be pressed within five seconds of arming)
5 + 2 or 3 + ⓀⓀⓀⓀ or 5 + 2 or 3	Arms system silently (no arming status beeps)
7 + 1	Turns chime feature on and off
7 + 6	Identifies alarms in memory
8 + ⓀⓀⓀⓀ + 2	Initiates a phone test
8 + ⓀⓀⓀⓀ + 3	Initiates a sensor test
8 + installer ⓀⓀⓀⓀ + 3	Initiates a dealer sensor test

Testing Zones/Sensors

We recommend that you test sensors/zones after all programming is completed and whenever a zone/sensor-related problem occurs.

If the system does not respond as described in the following procedure, see the “Troubleshooting” section.

1. Place all sensors/zones in their non-alarm state.
2. At an alphanumeric touchpad, enter the sensor test mode by pressing 8 + installer ⓀⓀⓀⓀ + 3. The touchpad sounds one beep and displays *SENSOR TEST, 15 MINUTES LEFT*. The system stays in sensor test for 15 minutes. When less than 5 minutes remain, touchpads and interior sirens beep once every minute. After 15 minutes the panel disarms to *OFF* automatically.
3. Trip each zone/sensor one at a time. Touchpads (and interior sirens) should sound one short, high-pitched beep and the display shows the sensor name (or number if text for that sensor is not programmed) and *OK*.
4. Press the STATUS button when you think all zones/sensors are tested. The touchpad displays any untested sensors/zones and touchpad panics. If all sensors/zones and touchpad panics have been tested, the display shows *SENSOR TEST OK* or *ZONES ALL TESTED* (fixed display touchpads).
5. Test any untested zones/sensors and touchpad panics.
6. If you need more time to complete the sensor test, press 8 + installer ⓀⓀⓀⓀ + 3 while the system is still in sensor test. This restarts the 15 minutes of test time.
7. When all sensors/zones and touchpad panics have been tested, press 1 + installer ⓀⓀⓀⓀ to exit sensor test.

If a Wireless Sensor Does Not Test

If touchpads display *SENSOR FAILURE* and sirens sound a long, low-pitched beep when a zone/sensor is tripped, this indicates wireless sensor signal strength is below acceptable limits. Distance from the receiver and/or installation environment are most likely affecting the sensor signal strength.

Note

While the sensor test is a valuable installation and service tool, it only tests sensor operation for the current conditions. You should perform a sensor test after any change in environment, equipment, or programming.

Note

If you hear a long, low-pitched beep, proceed to the section “If a Wireless Sensor Does Not Test.”

When possible, locate wireless sensors within 100 feet of the panel. While a transmitter may have a range of 1,000 feet or more out in the open, the environment at the installation site can have a significant effect on transmitter range. Refer to the “Troubleshooting” section to resolve the problem.

For wireless sensors that don’t respond, use an ITI RF Sniffer (60-401) test tool to verify that the sensor is transmitting. Constant beeps from the RF Sniffer indicate a runaway (faulty) sensor. Remove the sensor battery and replace the sensor.

Testing Phone Communication

Perform a phone test to check the phone communication between the panel and the central monitoring station.

➤ **To perform a phone test:**

1. Contact the central monitoring station to inform them that you are testing the system.
2. Press **[*]** + system master **[*][0][0][E]** + **[*]**. The display shows *PHONE TEST* and the touchpad sounds one beep.

When the panel completes the test, the system returns to the previous arming level automatically.

If the display continues to show *PHONE TEST* for 1½ minutes or more, enter **[*]** + system master **[*][0][0][E]** and refer to the “Troubleshooting” section.

Testing Central Station/Pager Communication

After performing sensor and phone tests, check that the system is reporting alarms successfully to the central station (or pager).

➤ **To test communication with the central station/pager:**

1. Call the central station and tell the operator that you will be testing the system.
2. Arm the system.
3. Test each of the touchpad and wireless panic buttons and trip at least one sensor of each type (fire, intrusion, etc.) to verify correct operation.
4. Check pager displays to verify reports are received. Pagers display an event code, digit sensor number, and the last four digits of the account number.

For example, a pager display of *999 002 7468* indicates the following; *999* = alarm condition, *002* = sensor/zone in alarm or user number, and *7468* = last four digits of account number. Table 5 describes pager system event codes. Table 6 describes pager sensor/zone number and user number report codes

5. When you finish testing the system, call the central monitoring station to verify that the alarms were received.

Testing Outputs/Sirens

All outputs (Onboard and SnapCard) should be tested to verify configuration programming.

➤ **To Test Outputs:**

1. Contact the central monitoring station to inform them that you are testing the system.
2. Verify that all wiring at the panel and output devices is correct.
3. Activate the appropriate device to trigger each output as programmed.
4. Verify that each output responds according to the programmed configuration number. For outputs that trigger sirens, verify that the correct alarm sounds are produced from these sirens. Table 7 describes the system alarm sounds you should hear for each alarm event.

Contact the central monitoring station when you are finished testing.



Be sure to contact the central monitoring station *before* activating outputs that trigger from an alarm condition.

Table 5: Pager System Event Codes

Code	System Event
009	Zone Restoral
111	System Disarmed
118	Trouble Condition Cleared
119	Alarm Canceled
222	System Armed to STAY
333	System Armed to AWAY
555	Phone Test
888	System Trouble Condition
999	System in Alarm

Table 6: Pager Codes

Code	Sensor/Zone or User Number
000	System event not caused by a zone or user
001 - 024	Sensor/Zone Numbers 1 - 24
600 - 615	Regular User Codes 0 - 15 used
678	System Master Code used
679	Installer Code used
680	Dealer Code used
697	Quick Arm used
698	Keyswitch Sensor used
699	System Armed Itself (during service or power-up)





Table 7: System Alarm Sounds

Alarm Type	Alarm Sound
Fire	Repeating series of three beeps
Police/Intrusion	Continuous tone
Auxiliary	Rapid beeps

Changing Fixed Display LCD Touchpad Chime and Trouble Beep Tones

The frequency (pitch) of chime and trouble beep tones from a fixed display touchpad can be adjusted to a more desirable or distinct tone, and to compensate for hearing impaired persons.

➤ **To change status tone pitch:**

1. Press and hold the  and  buttons together until you hear a steady tone, then release the buttons.
2. Press and hold  to lower the pitch or press and hold  to raise the pitch.
3. When the desired pitch is heard, release the button.

If there is no touchpad activity for about 15 seconds, the steady tone stops sounding.

Note


For the comfort of users, chime and trouble beep tones revert to the quieter, default frequency while the keypad is in use (during or within 15 seconds of any button activity at that specific touchpad).

Troubleshooting

This section describes what to do if you experience problems with system operation. Topics are in alphabetical for easy reference.

Feature	Problem	Action/Solution
Access Code	Customer cannot remember access code(s).	<ol style="list-style-type: none"> 1. Check your records to see if you have the customer's access code(s) on file. 2. Verify the access code(s) using the Downloader. 3. Clear memory and reprogram the panel locally. <p>Note Clearing panel memory deletes factory zone programming.</p>
	Installer cannot remember install code.	<ol style="list-style-type: none"> 1. Check your records to see if you have the install code on file. 2. Verify the install code using the Downloader. 3. Use the Dealer Code to enter program mode and view the installer code. 4. Call Technical Support for assistance.
	Installer cannot remember dealer code	<ol style="list-style-type: none"> 1. Check your records to see if you have the dealer code on file. 2. Verify the dealer code using the Downloader. 3. Call Technical Support for assistance.
Alphanumeric Touchpads	Display shows all *****.	Touchpad is not connected to panel bus terminals or is wired incorrectly. Check and correct wiring.
	Display is blank.	<ol style="list-style-type: none"> 1. Check that panel is powered up. 2. Check for touchpad power and/or bus miswiring, opens, or shorts. 3. Check touchpad brightness setting (see the user programming <i>OPTIONS</i> menu).
	Touchpad buttons don't beep when pressed.	<ol style="list-style-type: none"> 1. Check for touchpad power and/or bus miswiring, opens, or shorts. 2. Check that key beeps option is set to on (see the <i>ACCESSORY MODULES—BUS DEVICES</i> menu).
Arming and Disarming	System protests and won't arm.	<ol style="list-style-type: none"> 1. If arming to level 2, make sure all monitored perimeter doors and windows are closed. 2. If arming to level 3, make sure all perimeter and interior sensors are closed. 3. Press STATUS for an indication of the problem.
	System won't disarm.	<ol style="list-style-type: none"> 1. Disarming using incorrect code. Enter correct code. 2. Access code is not programmed or set up in user programming to disarm system. 3. Wireless touchpad is not learned into system or hardwire touchpad is not communicating to panel. Check installer programming for learned touchpads. 4. The installer code is being used to disarm the system. The system is designed <i>not to disarm</i> using the installer code. Use a regular or system master code to disarm the system.
Bypassing	Touchpad indicates <i>Invalid</i> when you attempt to bypass a sensor.	<ol style="list-style-type: none"> 1. Sensor is already bypassed. 2. Attempting to bypass a 24-hour sensor that cannot be bypassed (group 26 fire sensors). 3. Sensor is not active in the current arming level.
	System cancels sensor bypass when you try to arm to level 2 or 3.	Sensor is being bypassed before arming to 2—STAY or 3—AWAY. Arm to the desired level before bypassing a sensor.
Central Station/Pager Reporting		

Feature	Problem	Action/Solution
	Central station/pager is not receiving reports.	<ol style="list-style-type: none"> 1. Check that the premises phone line is working. 2. Perform a phone test. 3. Check that the DB-8 cord is plugged into the RJ-31X/CA-38A jack. 4. Check that the DB-8 cord is wired correctly to the panel. 5. Check for correct phone line wiring between the TELCO block and RJ-31X/CA-38A jack. 6. Replace faulty RJ-31X/CA-38A jack. 7. Replace faulty DB-8 cord. 8. Verify that central station/pager phone number is programmed into the panel. Reprogram the phone number and retest, if necessary. 9. Verify that reporting features, such as High Level Rpts and Low Level Rpts, are set to "on." 10. Verify that the correct phone format (SIA or CID) is being used. 11. For pagers, extend the pager delay setting (see the <i>PHONE OPTIONS—GLOBAL</i> menu in the "Programming" section).
Downloading/Uploading		
	Download/upload session fails on a pre-programmed panel.	<ol style="list-style-type: none"> 1. Check all phone troubleshooting Action/Solution steps. 2. Verify Downloader Phone Number matches ToolBox setting. 3. Verify Downloader Code matches ToolBox setting. 4. Verify Dealer Code matches ToolBox setting. 5. Verify panel Account Number matches ToolBox setting.
	Download/upload session fails on an unprogrammed panel.	Check all phone troubleshooting Action/Solution steps.
Hardwire Zones		
	System doesn't go into alarm when zone is tripped.	<ol style="list-style-type: none"> 1. System is disarmed. Arm system and then trip the zone. 2. Zone is not learned into panel memory. Enter installer/dealer program mode and use the <i>LEARN SENSORS</i> menu to add the zone into memory.
	Zone reports trouble condition.	<ol style="list-style-type: none"> 1. Check that onboard and SnapCard zone inputs have a 2k-ohm EOL resistor installed at the last device on the loop (in series for N/C loops or in parallel for N/O loops). 2. Check for zone wire fault—short circuit on N/C loops, open circuit on N/O loops. 3. Make sure all devices on zone are in non-alarm state, then enter disarm command to reset zone.
Panel Power		
	Panel does not power up. Touchpads don't display or respond.	<ol style="list-style-type: none"> 1. Check that panel transformer is plugged into an unswitched outlet. 2. Check the AC circuit breaker to be sure the circuit is live. 3. Check that the backup battery is installed correctly and the AC power transformer is plugged in. 4. Check for proper panel and transformer wiring. 5. Measure the incoming AC voltage at panel terminals 1 and 2. It should read about 16.5 VAC.
	No incoming AC voltage at panel terminals 1 and 2.	<ol style="list-style-type: none"> 1. Unplug the AC power transformer and disconnect the wires from the transformer and the panel. 2. Check transformer to panel wire for short or open circuits. 3. Plug in the transformer and check for 16.5 VAC at the transformer unconnected terminals. If zero (0) volts, replace the transformer.
Panel Power (Continued)		

Feature	Problem	Action/Solution
	Touchpad display indicates <i>SYSTEM LOW BATTERY</i> .	<ol style="list-style-type: none"> 1. Check that the backup battery is installed correctly and the AC power transformer is plugged in. 2. Measure the incoming AC voltage at the panel terminals 1 and 2. It should read about 16.5 VAC. 3. Remove the backup battery power by disconnecting the red (positive) battery wire. Check for 11.75 to 13.5 VDC battery charging voltage between panel terminal 3 (GND) and the disconnected red battery wire. If the charging voltage is not within range, call Technical Services. 4. Check for 11.75 to 13.5 VDC battery voltage between the backup battery spade lugs. If the battery voltage is not within this range, replace the battery. <p>Note <i>When the panel is running a backup battery test, the reading at the connected battery can range from 11.2 to 13.5 VDC. The panel automatically runs a backup battery test under the following conditions: (1) on initial power-up, (2) during user sensor test, (3) once every minute when backup battery has failed, (4) once every 24 hours at the programmed STIME (UL 98 Options off) or once every 4 hours (UL 98 Options on).</i></p> <p><i>With the AC power transformer plugged in, the panel automatically charges the battery. While the battery is charging for the first time it is normal for the system to indicate System battery failure. This can take a number of hours depending on the initial battery charge. Once the battery reaches 12.5 VDC (full charge as measured while in battery test), the condition clears. If the trouble condition persists after 24 hours, replace the backup battery.</i></p>
	After you press STATUS, the touchpads flash <i>AC</i> or display <i>AC POWER FAILURE/AC FAILURE</i> . (Panel continues to operate from backup battery.)	<ol style="list-style-type: none"> 1. Check the AC circuit breaker to be sure the circuit is live. 2. Check for proper panel and transformer wiring. 3. Check that the transformer is plugged into a nonswitched outlet and secured with the provided screw. 4. Check that the transformer is supplying AC to the panel. (Transformer internal fuse may be blown.) <div style="display: flex; align-items: center; margin-top: 10px;">  <p>Warning Be careful when securing the transformer to an outlet with a metal cover. Hold the cover tightly in place. You could receive a serious shock if the metal outlet cover drops down onto the prongs of the plug while you are securing the transformer and cover to the outlet box.</p> </div>
Phones	Loss of dial tone at on-site phones after wiring RJ-31X jack or connecting the DB-8 cord.	<ol style="list-style-type: none"> 1. Wait 2 minutes and try again. The panel may be busy trying to report to the central station. 2. Disconnect the panel DB-8 cord from the RJ-31 jack. If the phone still doesn't work, the system is okay and the problem is in the wiring. 3. Check RJ-31X jack wiring and TELCO block wiring. Replace RJ-31X jack if necessary. 4. Check DB-8 cord connections at the panel and RJ-31X jack. Replace cord if necessary. 5. Perform a phone test after troubleshooting the phone line.
	Constant dial tone preventing dial-out on premises phones.	One or more polarity-sensitive phones exist on-site. Reverse the phone wires connected to the brown and gray wire terminals on the RJ-31X jack.
Sirens	Piezo sirens connected to SnapCard or onboard (panel) outputs 1 and/or 2 don't produce any alarm sounds.	<ol style="list-style-type: none"> 1. Check for incorrect wiring between siren and panel; correct where necessary. 2. Output has not been configured (set up) to activate sirens. Enter program mode and configure output (see <i>ACCESSORY MODULES—BUS DEVICES—SNAP CARD</i>, or <i>ONBOARD OPTIONS—OUTPUT 1, 2</i> in the "Programming" section and the tables in Appendix A).
Wireless Sensor and Touchpad Batteries		

Feature	Problem	Action/Solution
	System indicates <i>SENSOR/TOUCHPAD NN LOW BATTERY</i> .	<p>Replace the indicated device battery. Test the sensor/touchpad after replacing the battery.</p> <p>Note <i>If the sensor/touchpad is not tested after battery replacement, the system continues to show a low battery condition since that was the last signal it received from the device. Testing the sensor/touchpad with new batteries allows the panel to receive a signal with good battery information.</i></p>
Wireless Sensor Zones		
	System doesn't respond (in sensor test or when armed) when sensor is tripped.	<ol style="list-style-type: none"> 1. Verify that panel loop antenna is installed up into antenna housing mounted on top of panel cabinet. 2. Check that the wireless sensor battery is installed. 3. Check the sensor battery for low voltage. Replace batteries if necessary. 4. Use an RF Sniffer (60-401) to verify that sensor is transmitting. 5. Sensor is not learned into panel memory. Enter installer/dealer program mode and use the <i>LEARN SENSORS</i> menu to add the sensor into memory.
	Sensor reports trouble condition.	<ol style="list-style-type: none"> 1. Sensor tamper switch is tripped—sensor cover is off, not latched securely, or sensor is not mounted securely. Secure sensor mounting and/or cover, then trip sensor to clear the condition. 2. Check the sensor battery for low voltage. Replace batteries, if necessary.
	Touchpad indicates [<i>SENSOR #</i>] <i>SUPERVISORY</i> .	<ol style="list-style-type: none"> 1. Use an RF Sniffer (60-401) to verify that sensor is transmitting. If sensor is not transmitting, check battery for low or no voltage and replace. 2. Change mounting position of sensor (from horizontal to vertical or vice versa) and test sensor several times for consistency. 3. Sensor signal is not reaching panel/receiver because sensor is too far away. Remove sensor from mounted location and test from other locations. Mount sensor in area where signal can reach panel/receiver.
	Smoke sensor beeps once every minute.	<p>Sensor batteries are getting low. Replace batteries.</p> <p>Note <i>System Sensor smoke sensors (model RF2300) don't transmit a low battery signal to the panel/receiver until battery voltage drops to within a range of 4.7 to 5.4 VDC. The sensor sounds beeps to notify occupants that the sensor batteries need replacing, but the sensor does not transmit a low battery signal to the panel until the next supervisory signal (69 minutes later).</i></p>
Wireless Touchpads		
	System doesn't respond to commands entered from a wireless touchpad.	<ol style="list-style-type: none"> 1. Verify that panel loop antenna is installed up into antenna housing mounted on top of panel cabinet. 2. Check that touchpad battery is installed. 3. Check the touchpad battery for low voltage. Replace battery, if necessary. 4. Use an RF Sniffer (60-401) to verify that touchpad is transmitting. 5. Touchpad is not learned into panel memory. Enter program mode and learn touchpad into memory.
	Touchpad reports trouble condition.	<p>Check the touchpad battery for low voltage. Replace battery, if necessary.</p>

**Appendix A:
System
Configuration
Worksheets**

Customer Name _____ Address _____

City _____ County _____ State ____ Zip _____

Phone (____) _____

Table A1: System Hardwire Devices

Part No.	Description	Qty.	Standby Current Draw	Standby Current Subtotal	Maximum Current Draw	Maximum Current Subtotal
Hardwire Sensors/Detectors						
N/A	System sensor models 2100D, 2100TD, 2100S, 2100TS, 2400, 2400TH, or ESL series 429AT, 521B, 521BXT	na	1.2 mA for 10 detectors		Panel limited to 100 mA	
13-463	Visus LP60 PIR Motion Detector		10 mA		10 mA	
13-464	DS940 PIR Motion Detector		17 mA		17 mA	
13-468	Optex RX-040 (PI) PIR Motion Detector		17 mA		17 mA	
SuperBus 2000 Devices (4 maximum)						
60-746-01	SuperBus 2000 2x16 LCD Alphanumeric Touchpad		57 mA		90 mA	
60-820	SuperBus 2000 Fixed Display Touchpad		33 mA		65 mA	
60-803-04	SuperBus 2000 2x20 LCD Alphanumeric Touchpad		75 mA		120 mA	
60-804-04	SuperBus 2000 2x20 VFD Alphanumeric Touchpad		75 mA		120 mA	
60-774	SuperBus 2000 Hardwire Input Module		18 mA		18 mA	
SnapCards (1 per panel)						
60-756	4 Input/2 Output SnapCard		10 mA + 2.5 mA per zone used + 7 mA per smoke loop used + 34 mA per relay used		185 mA	
60-757	8Z Hardwire Input SnapCard		10 mA + 2.5 mA per zone used + 7 mA per smoke loop used		230 mA	
60-758	4 Output SnapCard		6 mA + 34 mA per relay used		130 mA	
Total Standby Current Draw (must not exceed 90 mA for UL systems)						
Total Maximum Current Draw (must not exceed 750 mA)						

Note

For UL listed systems, the difference between the standby current draw and the maximum current draw of each device must be subtracted from the UL allowed alarm load of 650 mA (panel terminal 7—OUT1/+12)

Table A2: Zone/Sensor Assignments

No.	Group	Zone/Sensor Text
01		
02		
03		
04		
05		
06		
07		
08		
09		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

Table A3: Sensor Group Characteristics

No.	Name	Application	Alarm	Delay	Restoral	Supervisory	CS Report	Chime	Active Levels
00	Fixed Panic	24-hour audible fixed emergency buttons.	Police	Instant		√	√		1, 2, 3
01	Portable Panic	24-hour audible portable emergency buttons.	Police	Instant			√		1, 2, 3
02	Fixed Panic	24-hour silent fixed emergency buttons.	Silent	Instant		√	√		1, 2, 3
03	Portable Panic	24-hour silent portable emergency buttons.	Silent	Instant			√		1, 2, 3
04	Fixed Auxiliary	24-hour auxiliary sensor, such as Pendant Panic or holdup button.	Auxiliary	Instant		√	√		1, 2, 3
05	Fixed Auxiliary	24-hour auxiliary emergency button. Siren shutoff confirms CS report.	Auxiliary	Instant		√	√		1, 2, 3
06	Portable Auxiliary	24-hour portable auxiliary alert button.	Auxiliary	Instant			√		1, 2, 3
07	Portable Auxiliary	24-hour portable auxiliary button. Siren shutoff confirms CS report.	Auxiliary	Instant			√		1, 2, 3

Table A3: Sensor Group Characteristics (Continued)

No.	Name	Application	Alarm	Delay	Restoral	Supervisory	CS Report	Chime	Active Levels
08	Special Intrusion	Special belongings, such as gun cabinets and wall safes.	Police	Instant	√	√	√		1, 2, 3
09	Special Intrusion	Special belongings, such as gun cabinets and wall safes.	Police	Standard	√	√	√		1, 2, 3
10	Entry/Exit Delay	Entry and exit doors that require a standard delay time. #	Police	Standard	√	√	√	√	2, 3
11	Entry/Exit Delay	Garage doors and entrances that require an extended delay time. * #	Police	Extended	√	√	√	√	2, 3
12	Entry/Exit Delay	Driveway gates and entrances that require a twice extended delay time. * #	Police	Twice Extended	√	√	√	√	2, 3
13	Instant Perimeter	Exterior doors and windows. #	Police	Instant	√	√	√	√	2, 3
14	Instant Interior	Interior doors. #	Police	Follower	√	√	√		2, 3
15	Instant Interior	Interior PIR motion sensors. * #	Police	Follower		√	√		2, 3
16	Instant Interior	Interior doors. #	Police	Follower	√	√	√		3
17	Instant Interior	PIR motion sensors. * #	Police	Follower		√	√		3
18	Instant Interior	PIR motion sensors subject to false alarms. * † #	Police	Follower		√	√		3
19	Delayed Interior	Interior doors that initiate a delay before going into alarm. * #	Police	Standard	√	√	√		3
20	Delayed Interior	PIR motion sensors that initiate a delay before going into alarm. * #	Police	Standard		√	√		3
21	Local Instant Interior	24-hour local alarm zone protecting anything that opens and closes.	Police	Instant	√	√			1, 2, 3
22	Local Delayed Interior	Same as group 21, plus activation initiates a delay before going into alarm.	Police	Standard	√	√			1, 2, 3
23	Local Instant Auxiliary	24-hour local alarm zone protecting anything that opens and closes. ‡	Auxiliary	Instant	√	√			1, 2, 3
24	Local Instant Auxiliary	24-hour local alarm zone protecting anything that opens and closes. Sirens shut off at restoral. *	Auxiliary	Instant	√	√			1, 2, 3
25	Local Special Chime	Notify the user when a door is opened. Sounds emit from a local annunciator. *	Special Chime	Instant		√			1, 2, 3
26	Fire	24-hour fire, rate-of-rise heat, and smoke sensors. §	Fire	Instant	√	√	√		1, 2, 3
27	Output Module	Hardwire Output Module (HOM) lamp control or other customer feature. ‡	Silent	Instant	√	√			1, 2, 3
28	Output Module	HOM, PIR motion sensor, sound sensor, or pressure mat. ‡	Silent	Instant		√			1, 2, 3
29	Auxiliary	Freeze sensor.	Auxiliary	Instant	√	√	√		1, 2, 3
32	Output Module	HOM, PIR motion sensor, sound sensor, or pressure mat. ‡	Silent	Instant					1, 2, 3
34	Gas	Carbon monoxide (CO) Gas Detectors ‡	Auxiliary	Instant	√	√	√		1, 2, 3
35	Local Instant Police (Day Zone)	Local alarm in levels 1 and 2. Reports to CS in level 3.	Police	Instant	√	√	√ (level 3 only)		1, 2, 3

Table A3: Sensor Group Characteristics (Continued)

No.	Name	Application	Alarm	Delay	Restoral	Supervisory	CS Report	Chime	Active Levels
-----	------	-------------	-------	-------	----------	-------------	-----------	-------	---------------

Note: Check marks (☉) represent characteristics present in a group.

* This group is not certified as a primary protection circuit for UL-listed systems and is for supplementary use only.

† Sounds instant police siren if two or more sensors are tripped within 4 minutes. Otherwise sensors are followers to delayed sensors. If Alarm Verification is on, group 18 functions like group 17.

‡ This group has not been investigated by UL.

§ This group is required for UL-listed residential fire alarm applications.

See "Cross-Zoning" section on page 57

Cross-Zoning

Note
Cross-Zoning is not recommended for exit/entry zones. Each zone has the ability to individually protect the intended area. (e.g. motion detector patterns overlap).

Cross-Zone (Alarm Verify) refers to two different Group 10-20 sensors that must be tripped within four minutes of each other to report an alarm to the central station. The diagram in Figure 23 shows the path of a person walking from the kitchen to the living room. When the person is detected walking through the kitchen, the motion sensor in the kitchen is tripped, sounding a local alarm. If motion is detected by the living room motion sensor within two minutes, an alarm report will be sent to the central station.

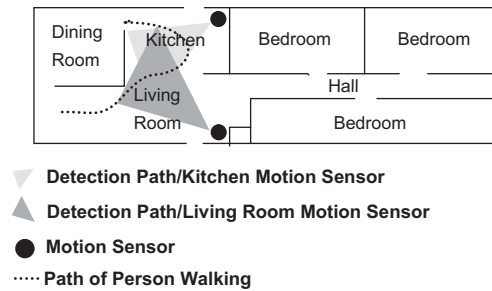


Figure 23. Cross-Zone Diagram

Table A4: Item Numbers and Sensor Text

Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text
001	Aborted	041	Date	081	Gas	121	North	161	Siren	201	G
002	AC	042	Daughter's	082	Glass	122	Not	162	Sliding	202	H
003	Access	043	Degrees	083	Goodbye	123	Now	163	Smoke	203	I
004	Active	044	Delay	084	Hallway	124	Number	164	Son's	204	J
005	Activity	045	Den	085	Heat	125	Off	165	Sound	205	K
006	Alarm	046	Desk	086	Hello	126	Office	166	South	206	L
007	All	047	Detector	087	Help	127	OK	167	Special	207	M
008	AM	048	Dining	088	High	128	On	168	Stairs	208	N
009	Area	049	Disarmed	089	Home	129	Open	169	Stay	209	O
010	Arm	050	Door	090	House	130	Opening	170	Supervisory	210	P
011	Armed	051	Down	091	In	131	Panic	171	System	211	Q
012	Arming	052	Download	092	Install	132	Partition	172	Tamper	212	R
013	Attic	053	Downstairs	093	Interior	133	Patio	173	Temperature	213	S
014	Auxiliary	054	Drawer	094	Intrusion	134	Pet	174	Test	214	T
015	Away	055	Driveway	095	Invalid	135	Phone	175	Time	215	U
016	Baby	056	Duct	096	Is	136	Please	176	To	216	V
017	Back	057	Duress	097	Key	137	PM	177	Touchpad	217	W
018	Bar	058	East	098	Kids	138	Police	178	Trouble	218	X

Table A4: Item Numbers and Sensor Text (Continued)

Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text	Item #	Sensor Text
019	Basement	059	Energy Saver	099	Kitchen	139	Pool	179	Unbypass	219	Y
020	Bathroom	060	Enter	100	Latchkey	140	Porch	180	Unit	220	Z
021	Battery	061	Entry	101	Laundry	141	Power	181	Up	221	(space)
022	Bedroom	062	Error	102	Left	142	Press	182	West	222	'(apostrophe)
023	Bottom	063	Exit	103	Level	143	Program	183	Window	223	- (dash)
024	Breezeway	064	Exterior	104	Library	144	Progress	184	Zone	224	_ (underscore)
025	Building	065	Factory	105	Light	145	Quiet	185	0	225	*
026	Bus	066	Failure	106	Lights	146	Rear	186	1	226	#
027	Bypass	067	Family	107	Living	147	Receiver	187	2	227	:
028	Bypassed	068	Father's	108	Load	148	Report	188	3	228	/
029	Cabinet	069	Feature	109	Loading	149	RF	189	4	229	?
030	Canceled	070	Fence	110	Low	150	Right	190	5		
031	Car	071	Fire	111	Lower	151	Room	191	6		
032	Carbon Monoxide	072	First	112	Main	152	Safe	192	7		
033	Central	073	Floor	113	Master	153	Schedule	193	8		
034	Chime	074	Force	114	Mat	154	Screen	194	9		
035	Closed	075	Foyer	115	Medical	155	Second	195	A		
036	Closet	076	Freeze	116	Memory	156	Sensor	196	B		
037	Closing	077	Front	117	Menu	157	Service	197	C		
038	Code	078	Furnace	118	Mother's	158	Shed	198	D		
039	Computer	079	Gallery	119	Motion	159	Shock	199	E		
040	Control	080	Garage	120	No	160	Side	200	F		

Table A5: System Settings

Menu Name & (Default)	Shortcut No.	Setting
Installer Programming—8 + Installer/Dealer CODE + 00		
24-Hour Tamper	05000	
AC Failure (Off)	05010	
Account No. (00000)	0010	
Activity Timeout (24 hours)	0305	
Alarm Verify (Off)	0516	
Auto Phone Test (Off)	02001	
Auto Stay Arming (On)	0014	
Auto Test Reset (On)	02002	
Auxiliary Panic (On)	0401	
Back In Service (On)	05002	
Backup (CS Phone 1 On, CS Phone 2 Off)	0104 - cs phone 1 0114 - cs phone 2	_____
Battery Restoral (Off)	05005	
Buffer Control (Off)	05001	
Buffer Full Report (Off)	05006	
Bypass Reports (Off)	05003	
CS Phone 1 (None)	0100	
CS Phone 2 (None)	0110	
Call Wait Cancel (None)	02009	

Table A5: System Settings (Continued)

Menu Name & (Default)	Shortcut No.	Setting
Cancel Message (On)	02007	
Closing Reports (Off)	0511	
Comm. Failure (On)	02003	
Daylight Savings (On)	0306	
Dealer Code (None)	0002	
Delete Sensors (None)	072	
Dialer Abort (On)	02005	
Dial Abort Delay (30 seconds)	02006	
Disable Trouble Beeps (Off)	0601	
Downloader Code (12345)	0000	
Downloader Phone No. (None)	0150	
DTMF Dialing (On)	02004	
Duress Code (None)	0016	
Duress Option (Off)	0514	
Edit Sensors (None)	073	
Entry Delay (30 seconds)	0310	
Exit Delay (60 seconds)	0311	
Exit Extension (On)	0013	
Extended Delay (4 minutes)	0312	
Fire Panic (On)	0400	
Force Armed (Off)	0515	
High Level Reports (CS Phone 1 On, CS Phone 2 Off, Pagers 1, 2, 3 all On)	0101 - cs phone 1 0111 - cs phone 2 0121 - pager 1 0131 - pager 2 0141 - pager 3	_____ _____ _____ _____ _____
Immediate Trouble Beeps (Off)	0600	
Installer Code (4321)	0001	
Keychain TP Arming (Off)	0403	
Keyswitch Sensor (None)	0015	
Latchkey Reports (Pagers 1, 2, 3 all On)	0124 - pager 1 0134 - pager 2 0144 - pager 3	_____ _____ _____
Learn Sensors (None)	070	
Low CPU Battery	05004	
Low Level Reports (CS Phone 1 On, CS Phone 2 Off, Pagers 1, 2, 3 all Off)	0102 - cs phone 1 0112 - cs phone 2 0122 - pager 1 0132 - pager 2 0142 - pager 3	_____ _____ _____ _____ _____
Next Phone Test (7 days)	0303	
No Activity Reports (Off)	0513	
Open/Close Reports (All Off)	0103 - cs phone 1 0113 - cs phone 2 0123 - pager 1 0133 - pager 2 0143 - pager 3	_____ _____ _____ _____ _____
Opening Reports (Off)	0510	
Output 1 (00410 - any audible alarm)	09100	
Output 2 (01710 - status & alarm tones)	09110	

Table A5: System Settings (Continued)

Menu Name & (Default)	Shortcut No.	Setting
Output Trip Time (4 seconds)	0304	
Pager Delay (15 seconds)	02008	
Pager Phone 1 (None)	0120	
Pager Phone 2 (None)	0130	
Pager Phone 3 (None)	0140	
Phone Test (On)	02000	
Phone Test Freq. (7 days)	0302	
Police Panic (On)	0402	
Quick Arm (Off)	0011	
Quick Exit (On)	0012	
Receiver Failure (Off)	05011	
Recent Closings (On/weekly)	0512	
Remote Access (On)	0210	
RF Low Battery RPT (On/weekly)	05012	
RF Supervisory RPT (On/weekly)	05013	
RF TX Timeout (12 hours)	0301	
Reporting Format (All CID)	0105 - cs phone 1 0115 - cs phone 2	_____
Ring/Hang/Ring (On)	0211	
Sensor Text (None)	071	
SIA False Alarm Reduction	0003	
Siren Timeout (4 minutes)	0313	
Siren Verify (Off)	0610	
Smoke Verify (Off)	0900	
SnapCard Output 1 (01400 - keychain Touchpad * button activation)	081000	
SnapCard Output 2 (00410 - any audible alarm)	081010	
SnapCard Output 3 (00903 - arming to STAY or AWAY)	081020	
SnapCard Output 4 (01003 - arming to AWAY)	081030	
Star Is No Delay (Off)	0404	
Supervisory Time (random)	0300	
Swinger Limit (1)	05014	
System Tamper (Off)	0517	
TP Panic RPT FMT (Off)	05009	
Two Trip Error (Off)	05008	
Two Wire Smoke (Off)	0901	
UL 98 Options (Off)	0602	
Zone Restorals (Off)	05007	
User Programming—9 + System Master CODE		
Chime On Close (Off)	25	
Date (01/01/00)	01	
Downloading (On)	20	
Factory Code	30	(Factory-set)
Silent Arming (Off)	21	
System Level	32	(Factory-set)
System Master Code (1234)	110	

Table A5: System Settings (Continued)

Menu Name & (Default)	Shortcut No.	Setting
System Number	31	(Factory-set)
Time (00:00)	00	
Touchpad Brightness (2)	22	
User Code 00 (None) Direct Bypassing (off) System Tests (off)	10000 10001 10002	_____ _____ _____
User Code 01 (None) Direct Bypassing (off) System Tests (off)	10010 10011 10012	_____ _____ _____
User Code 02 (None) Direct Bypassing (off) System Tests (off)	10020 10021 10022	_____ _____ _____
User Code 03 (None) Direct Bypassing (off) System Tests (off)	10030 10031 10032	_____ _____ _____
User Code 04 (None) Direct Bypassing (off) System Tests (off)	10040 10041 10042	_____ _____ _____
User Code 05 (None) Direct Bypassing (off) System Tests (off)	10050 10051 10052	_____ _____ _____
User Code 06 (None) Direct Bypassing (off) System Tests (off)	10060 10061 10062	_____ _____ _____
User Code 07 (None) Direct Bypassing (off) System Tests (off)	10070 10071 10072	_____ _____ _____
User Code 08 (None) Direct Bypassing (off) System Tests (off)	10080 10081 10082	_____ _____ _____
User Code 09 (None) Direct Bypassing (off) System Tests (off)	10090 10091 10092	_____ _____ _____
User Code 10 (None) Direct Bypassing (off) System Tests (off)	10100 10101 10102	_____ _____ _____
User Code 11 (None) Direct Bypassing (off) System Tests (off)	10110 10111 10112	_____ _____ _____
User Code 12 (None) Direct Bypassing (off) System Tests (off)	10120 10121 10122	_____ _____ _____
User Code 13 (None) Direct Bypassing (off) System Tests (off)	10130 10131 10132	_____ _____ _____
User Code 14 (None) Direct Bypassing (off) System Tests (off)	10140 10141 10142	_____ _____ _____
User Code 15 (None) Direct Bypassing (off) System Tests (off)	10150 10151 10152	_____ _____ _____

Table A6: System Event Trigger Numbers

System Event	Trigger No.
Fire Alarm	001
Police Alarm	002

Table A6: System Event Trigger Numbers (Continued)

System Event	Trigger No.
Auxiliary Alarm	003
Any Audible Alarm	004
Silent Alarm (sensor groups 2, 3, and duress)	005
Any Audible or Silent Alarm	006
HOM Group 27, 28, 32 in Alarm	007
Major Trouble (phone or receiver failure)	008
Arming to STAY or AWAY	009
Arming to AWAY	010
AVM is Interactive (audio session in progress)	011
Fail-to-Communicate (panel can't call CS or pager)	012
AVM Trip (edge)	013
Keychain Touchpad Star Button-Press	014
Smoke Power (for resetting 4-wire smoke detectors)	015
Exterior Siren	016
Interior Siren	017
AVM Trip (pulse)	018

Table A7: Sensor Group Event Trigger Numbers

Sensor Group	Trigger No.
Group 00 in alarm	064
Group 01 in alarm	065
Group 02 in alarm	066
Group 03 in alarm	067
Group 04 in alarm	068
Group 05 in alarm	069
Group 06 in alarm	070
Group 07 in alarm	071
Group 08 in alarm	072
Group 09 in alarm	073
Group 10 in alarm	074
Group 11 in alarm	075
Group 12 in alarm	076
Group 13 in alarm	077
Group 14 in alarm	078
Group 15 in alarm	079
Group 16 in alarm	080
Group 17 in alarm	081
Group 18 in alarm	082
Group 19 in alarm	083
Group 20 in alarm	084
Group 21 in alarm	085
Group 22 in alarm	086

Table A7: Sensor Group Event Trigger Numbers (Continued)

Sensor Group	Trigger No.
Group 23 in alarm	087
Group 24 in alarm	088
Group 25 in alarm	089
Group 26 in alarm	090
Group 27 in alarm	091
Group 28 in alarm	092
Group 29 in alarm	093
Group 32 in alarm	096
Group 33 in alarm	097
Group 34 in alarm	098
Group 35 in alarm	099

Table A8: Sensor Number Event Trigger Numbers

Sensor Number	State	Trigger No.	State	Trigger No.
Sensor 01	in alarm	129	open	229
Sensor 02	in alarm	130	open	230
Sensor 03	in alarm	131	open	231
Sensor 04	in alarm	132	open	232
Sensor 05	in alarm	133	open	233
Sensor 06	in alarm	134	open	234
Sensor 07	in alarm	135	open	235
Sensor 08	in alarm	136	open	236
Sensor 09	in alarm	137	open	237
Sensor 10	in alarm	138	open	238
Sensor 11	in alarm	139	open	239
Sensor 12	in alarm	140	open	240
Sensor 13	in alarm	141	open	241
Sensor 14	in alarm	142	open	242
Sensor 15	in alarm	143	open	243
Sensor 16	in alarm	144	open	244
Sensor 17	in alarm	145	open	245
Sensor 18	in alarm	146	open	246
Sensor 19	in alarm	147	open	247
Sensor 20	in alarm	148	open	248
Sensor 21	in alarm	149	open	249
Sensor 22	in alarm	150	open	250
Sensor 23	in alarm	151	open	251
Sensor 24	in alarm	152	open	252

Note

When using event trigger numbers in Table A9, the corresponding feature must be turned on to activate outputs.

Table A9: System Feature Event Trigger Numbers

Feature	State	Trigger No.
Phone Test	in alarm	205
AC Failure	in alarm	206
CPU Low Battery	in alarm	207
Auto Phone Test	in alarm	208
Receiver Failure	in alarm	209
Back In Service	in alarm	210
Phone Failure	in alarm	211
Buffer Full	in alarm	212
Two Trip Error	in alarm	213
System Tamper	in alarm	214
No Activity	in alarm	216
Fire Panic	in alarm	217
Police Panic	in alarm	218
Auxiliary Panic	in alarm	219
Opening Report	in alarm	220
Closing Report	in alarm	221
Latchkey Report	in alarm	222
Duress	in alarm	223
Force Armed Report	in alarm	224
Recent Closing Report	in alarm	226
Sensor Test Report	in alarm	227

Table A10: Response Numbers

Siren Tracking	Trip Delay	Response Time	Response No.
no	no	momentary	00
no	no	3 minutes ⁵	01
no	no	siren time ²	02
no	no	sustained ³	03
no	yes ⁴	momentary	04
no	yes ⁴	3 minutes ⁵	05
no	yes ⁴	siren time ²	06
no	yes ⁴	sustained ³	07
yes ¹	no	momentary	08
yes ¹	no	3 minutes ⁵	09
yes ¹	no	siren time ²	10
yes ¹	no	sustained ³	11
yes ¹	yes ⁴	momentary	12
yes ¹	yes ⁴	3 minutes ⁵	13

Table A10: Response Numbers

Siren Tracking	Trip Delay	Response Time	Response No.
yes ¹	yes ⁴	siren time ²	14
yes ¹	yes ⁴	sustained ³	15

Notes for Table A10 Response Numbers

Note

The mechanical lifetime of the relay may be exceeded if an output is set up for a siren tracking response and a pulsing siren (auxiliary or fire) is active for long time periods. A SnapCard relay output lifetime expectancy is about 350 total pulsing hours.

Note

The trip delay is factory set for 30 seconds and cannot be changed.

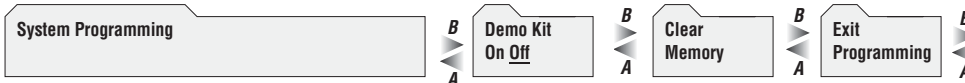
1. If an event does not trigger sirens, siren tracking response numbers activate without turning on the output. If sirens are triggered by another event, the output pulses to match the siren. If the siren cadence changes (for example from police to fire), outputs set up for siren tracking change to match the siren and all pulsing outputs pulse to one common cadence.
2. If an event does not trigger sirens, siren time response times activate outputs only if sirens are active for another reason.
3. If an alarm event does not necessarily require disarming (no activity, closing report, etc.), outputs set up for a sustained response time remain activated until the next arming level change.
4. If an event occurs that activates an output set up for trip delay, the delay and output activation can be canceled by trigger event restoral.
5. Activated outputs set up for a 3-minute response time remain active for the entire 3 minutes. To deactivate the output before the 3-minute time expires, you must enter program mode or remove panel power. Activated outputs set up for a momentary or 3-minute response time restart if the same trigger event occurs again.

Appendix B: Programming Mode Menus and Settings

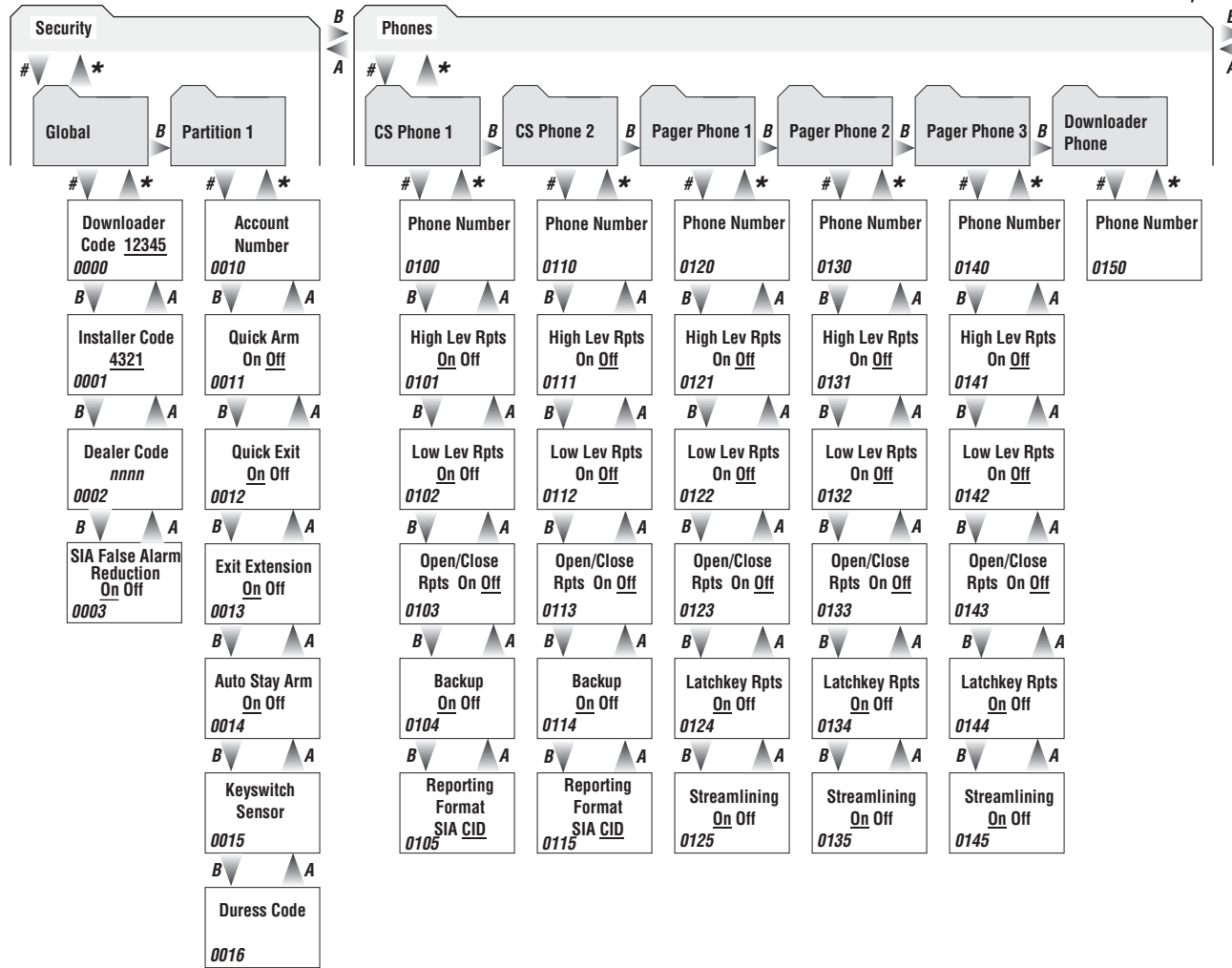
To enter Programming Mode:

8 + Installer or
Dealer Code + 0 + 0

TIER 1 MENUS



TIER 2 MENUS



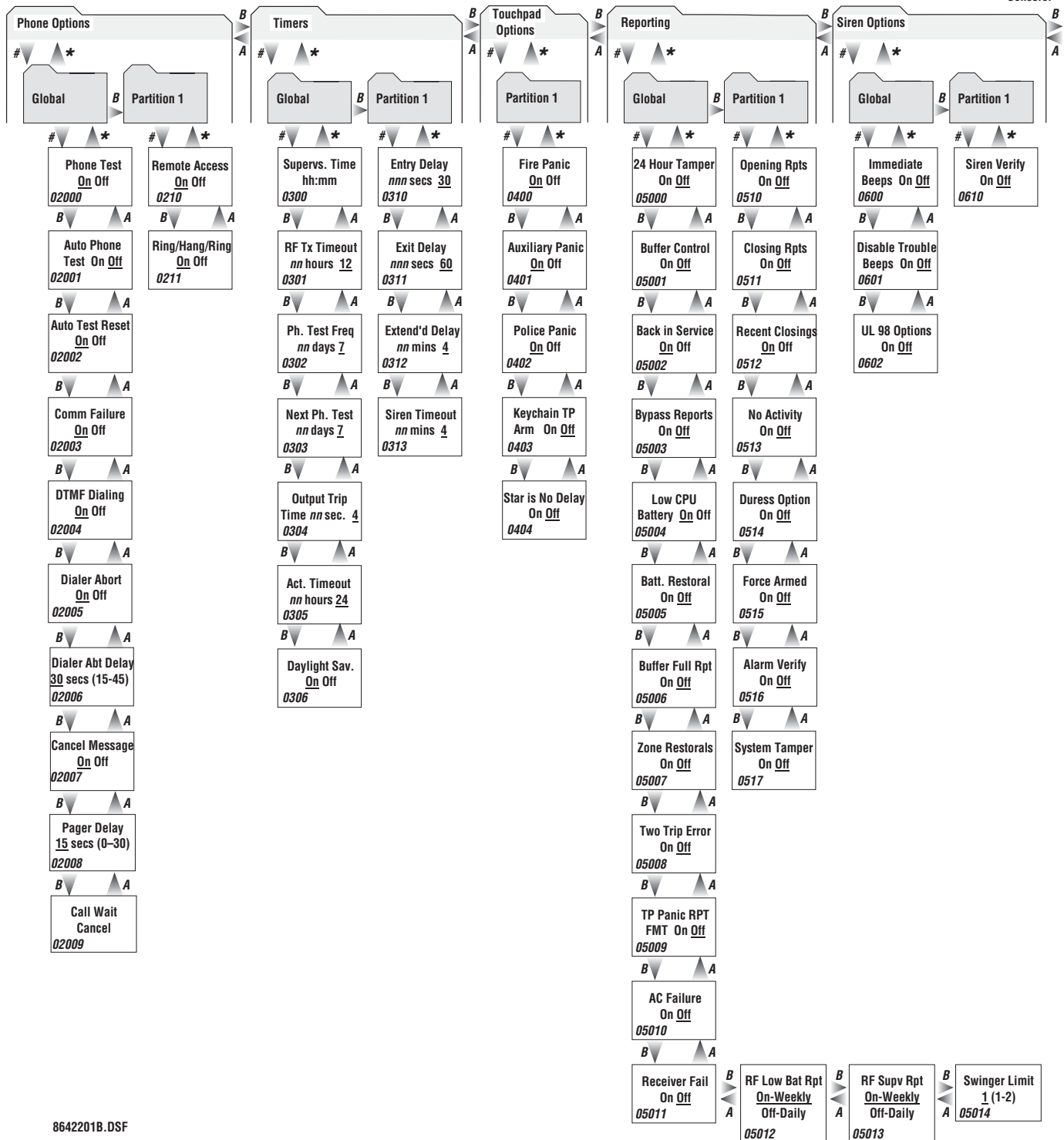
Notes

- Underlined settings indicate defaults.
- Shortcut numbers appear in the lower-left corner of each menu box, where applicable.

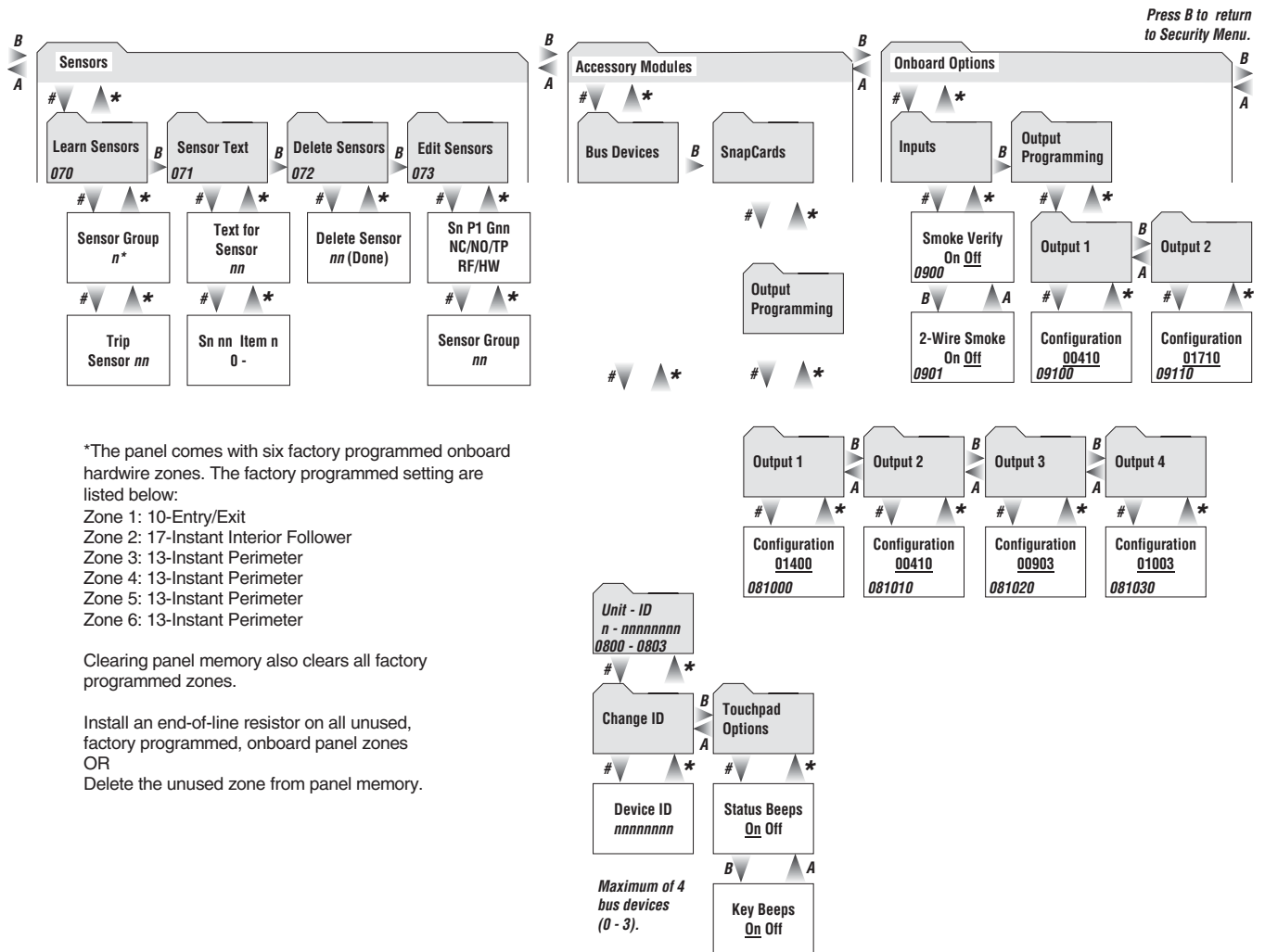
8642200A.DSF

Press B to continue to Sensors.

TIER 2 MENUS



8642201B.DSF



Appendix C: Software Release Notes

Software Version 1.73

The following features were changed/added for software version 1.73.

Downloader Code

- If the Dealer Code (0002) is set, the Installer Code (0001) can't view or edit the Downloader Code (0000)
- Downloader Code and CS Phone Numbers (0100/0110) are NOT reset by a memory clear operation using the Installer Code if the Dealer Code has been set. Using the Dealer Code for memory clear will include Downloader Code and CS Phone Numbers in the memory clear.

SIA False Alarm

- SIA False Alarm (0003) option has been added to control access to Silent Arming (21) in user programming. If SIA False Alarm is off, Silent Arming is available in user programming. If SIA False Alarm is on, Silent Arming is forced to off and is not available in user programming. SIA False Alarm defaults to on.
- SIA False Alarm control annunciating alarm level changes on exterior sirens. If SIA False Alarm is on, the arming level is annunciating on exterior siren output during an arming level change that is initiated by an RF device (touchpad or keyfob). If SIA False Alarm is off, the arming level is NOT annunciating on exterior siren output.

Central Station Reports

- An exit error event now sends an Entry/Exit Alarm and Exit Error reports to the central station.
In CID format the report is: (CID: 457,user# and 134,zone#)
IN SIA format the report is: (SIA: EE,user# and BA,zone#)

Entry Delay

- During Entry Delay the system can now be disarmed by entering a valid access code only. 1 + CODE is no longer required, but will still work.
- The low limit and default setting on Entry Delay has been changed from 32 to 30 seconds. Existing versions of Toolbox will still show a low limit and default setting of 32 seconds. When setting the Entry Delay in installer program mode, entering any number between 30 and 39 will result in an Entry Delay of 30 seconds.

Exit Delay

- The low limit on Exit Delay has been changed from 48 to 45 seconds, with the default setting changing from 64 to 60 seconds. Existing versions of Toolbox will still show a default setting of 64 seconds. When setting the Exit Delay in installer program mode, entering any number between 45 and 55 will result in an Exit Delay of 45 seconds and entering any number between 60 and 71 will result in an Exit Delay of 60 seconds.

Dialer Abort Delay

- The allowed range for Dialer Abort Delay (02006) has been changed from 15-120 seconds to 15-45 seconds.
- Abort delay is now used before every alarm, even alarms that occur during another alarm report. In the previous release, an alarm that came in during reporting of another event did not have a dial abort delay.

Disarming

- Disarming the system after an alarm when the siren has timed out can now be done by entering the access code. 1 + CODE is no longer required, but will still work.
- After disarming and canceling an alarm, the system now displays all the alarms that have occurred since the last disarming.

Downloader

- Eavesdrop delay for carrier detect on downloader call in is now 5 seconds instead of 2 seconds. This change should eliminate problems connecting with the downloader.
- The panel will recognize the extended version information request from the downloader and will respond with the extended version response message used by Enterprise.
- An OEM code can be set that will prevent a standard version Toolbox or Enterprise from communicating with the panel. These panels can only be downloaded by a version of Enterprise that supports the panel's specific OEM code.

Smoke Verify

- Smoke Verify (0900) is now implemented for RF smokes as well as hardwire smokes. The first trip of a group 26 RF sensor will cause a local fire alarm. The second trip of any group 26 zone within the siren timeout will cause that fire alarm to be reported to the central station. RF smoke detectors repeat the alarm transmission every 60 seconds as long as they are detecting smoke. This repeated transmission will serve as the second zone trip, causing the alarm to be reported. If a restoral is sent between alarm transmissions, the process starts over.

Reports

- Zone Restoral (05007) reports are now aborted for a zone alarm that is canceled in the abort window, even if the zone restores outside the abort window.
- "Report Aborted" now means that an alarm report to the central station was aborted. In previous releases it meant that an alarm report was aborted and there were no other events to be reported to the central station at that time.
- The event codes reported in CID format for an Auto Force Arm event were changed from 457 (exit error) to a closing report (401). Some central station centers dispatch on 457 and didn't want to receive it for a force arm event.

Specifications

Power Requirements:Class II, 16.5 VAC, 25 VA, 60 Hz

Rechargeable Batteries: ..12 VDC, 4Ah Lead-Acid (part no. 60-681) OR 12 VDC, 7Ah (part no. 60-680).
The battery will last 24 hours with no AC and specified standby load

Radio Frequency:319.5 MHz

Nominal Range:750 feet (305 meters) typical open air

Storage Temperature Range:- 30° to 140° F (-34° to 60° C)

Operating Temperature Range: 32° to 120° F (0° to 49° C)

Maximum Humidity:90% Relative Humidity (non-condensing)

Auxiliary Power Output: 12 V @ 750 mA, current limited

Dimensions:11 in. (28 cm) x 9 in. (23 cm) x 3.0 in. (7.6 cm) (H x W x D)

Concord Express System Wiring Diagram (60-806)

All Panel Terminal Connections Are Class II Power Limited

For Complete Information, See Installation Instructions 466-1665.

